

National Bureau of Standards  
Library, N.W. Bldg

Reference book not to be  
taken from the library.

Copy 1

JUL 6 1965

CRPL-F 250 PART B

FOR OFFICIAL DISTRIBUTION

PART B

SOLAR - GEOPHYSICAL DATA

ISSUED

JUNE 1965

U. S. DEPARTMENT OF COMMERCE  
NATIONAL BUREAU OF STANDARDS  
CENTRAL RADIO PROPAGATION LABORATORY  
BOULDER, COLORADO



## SOLAR - GEOPHYSICAL DATA

## CONTENTS

- (i) Revisions to Descriptive Text

**I DAILY SOLAR INDICES**

- (a) Relative Sunspot Numbers and 2800 Mc/s Solar Flux - April, May 1965
- (b) Graph of Sunspot Cycle

**II SOLAR CENTERS OF ACTIVITY**

- (a) Calcium Plage and Sunspot Regions - May 1965
- (b) Magnetic Classifications of Sunspots (Mt. Wilson) - May 1965
- (c) Provisional Coronal Line Emission Indices - May 1965

**III SOLAR FLARES**

- (a-j) Optical Observations - May 1965
- (k) Flare Patrol Observations - May 1965
- (l-o) Optical Observations - February 1965
- (p) Flare Patrol Observations - February 1965
- (q) Ionospheric Effects (SWF-SEA-SCNA-SPA-SES-SFD-Bursts) - April 1965
- (r) 30 Mc/s - Riometer Events (Frobisher Bay) - April 1965

**IV SOLAR RADIO WAVES**

- (a) 2800 Mc/s Outstanding Occurrences (ARO-Ottawa; DRAO-Penticton) - May 1965
- (b) 108 Mc/s Outstanding Occurrences (NBS-Boulder) - May 1965
- (c-e) 7.6-41 Mc/s Spectral Observations (HAO-Boulder) - May 1965
- (f-k) 9.1 cm Spectroheliograms (Stanford) - May 1965
- (l-p) 21 cm Spectroheliograms (Fleurs) - Dec. 1964, Jan., Feb. 1965

**V COSMIC RAY INDICES**

- (a) Neutron Monitors (Churchill - Climax - Dallas) - April 1965
- (b) Neutron Monitor (Deep River) - April 1965

**VI GEOMAGNETIC ACTIVITY INDICES**

- (a) C, Kp, Ap and Selected Quiet and Disturbed Days - April 1965
- (b) Chart of Kp by Solar Rotations - 1965

**VII RADIO PROPAGATION QUALITY INDICES**

- (a) CRPL Quality Figures and Forecasts - North Atlantic and North Pacific - April 1965
- (b) Graphs Comparing Forecasts and Observed Quality - High Latitude - April 1965
- (c-d) Graphs of Useful Frequency Ranges - North Atlantic - April 1965

**VIII ALERT PERIODS AND SPECIAL WORLD INTERVALS**

- (a) IQSY Alert Periods - May 1965



The descriptive text was republished in November 1964. Addenda have been given in the introduction to each of the CRPL-F Part B reports, December 1964 through May 1965.

Note:

The NRL Solar Radiation Monitoring Satellite data for April 1964 (issued in CRPL-F 249 B) should have been labelled revised. The data presented for that month were more complete than those given in CRPL-F 241 B issued September 1964.

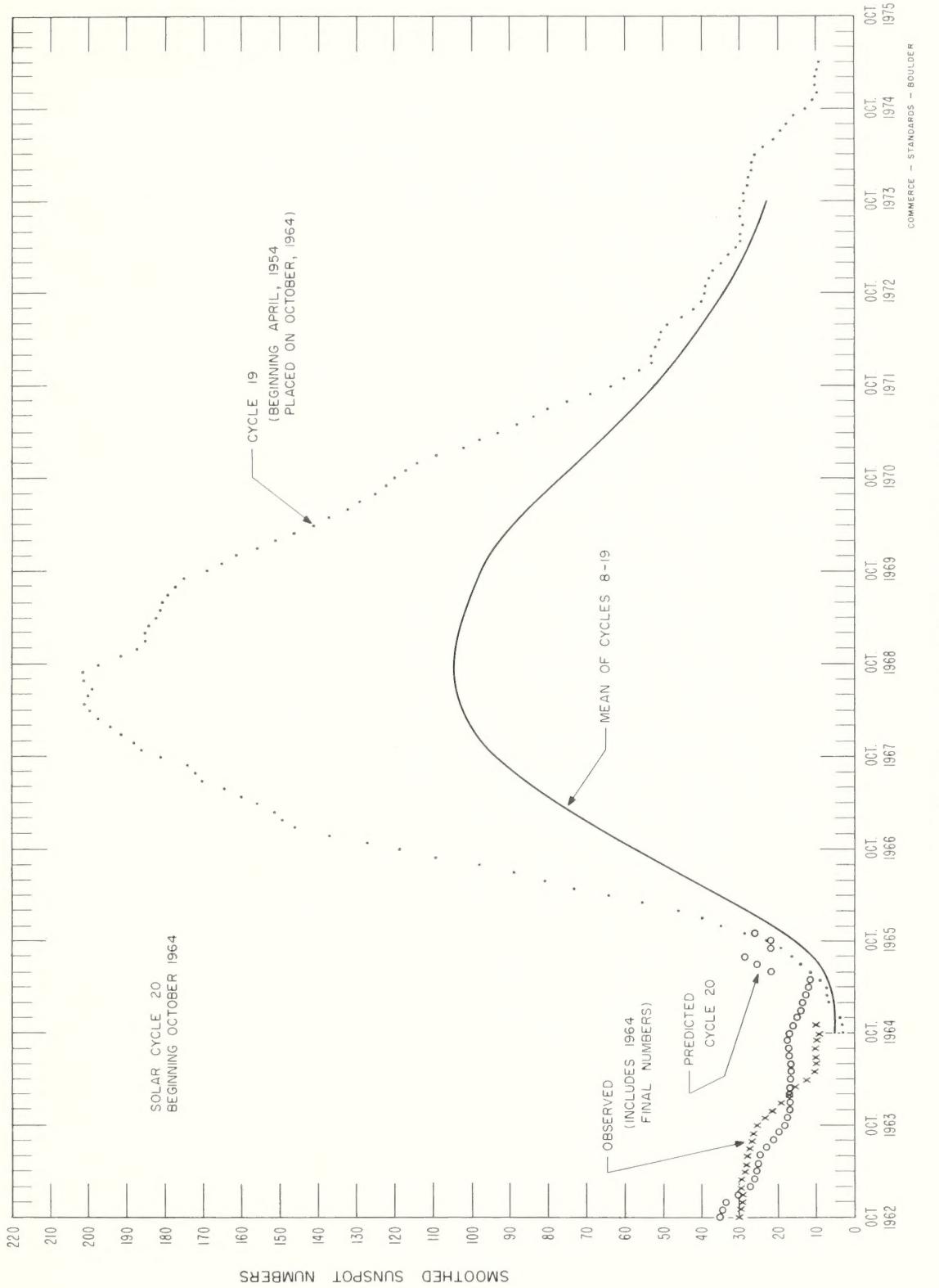
SOLAR RADIO WAVES  
21 cm Spectroheliograms

A daily series of radio spectroheliograms are presented from the "Fleurs" Radio Astronomy Field Station of the University of Sydney, Sydney, Australia, under the direction of Professor W. N. Christiansen. East-West and North-South arrays in the form of a cross give pencil beam scans with a resolution of about three minutes of arc. This program is supported by CRPL through National Aeronautics and Space Administration assistance.

The maps show the distribution of radio emission across the solar disk at a wavelength of 21 cm by means of brightness temperature values. The unit of brightness temperature is 1700°K. It gives about the same central temperature for the quiet sun as was found at the last minimum epoch (47,000°K). The noise level is about 5 units. Contours have been sketched at the 50 and 100 unit levels to draw attention to the brighter radio plage regions. Since there is equatorial limb brightening of the quiet sun, weak radio plages in the center of the disk are discriminated against. Below each number is a dot marking the point on the disk to which the number specifically refers.

## DAILY SOLAR INDICES

April 1965		American Relative Sunspot Numbers R <sub>A</sub>		May 1965		Zürich Provisional Relative Sunspot Numbers R <sub>Z</sub>		Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux S	
1	0			1	0	71.1		72.2	
2	0			2	15	70.8		71.9	
3	0			3	8	70.7		71.9	
4	0			4	8	69.7		70.9	
5	0			5	7	69.0		70.2	
6	0			6	0	70.4		71.7	
7	0			7	11	71.4		72.7	
8	0			8	17	72.0		73.4	
9	0			9	9	72.4		73.8	
10	0			10	0	72.1		73.5	
11	5			11	0	71.1		72.5	
12	10			12	15	71.8		73.3	
13	11			13	23	74.4		76.0	
14	12			14	25	75.4		77.0	
15	17			15	37	80.5		82.3	
16	12			16	42	86.3		88.3	
17	14			17	62	91.1		93.2	
18	8			18	79	90.4		92.6	
19	0			19	82	92.4		94.6	
20	1			20	78	94.7		97.0	
21	13			21	75	92.8		95.1	
22	19			22	65	92.2		94.5	
23	18			23	51	86.2		88.4	
24	10			24	47	BURST		BURST	
25	10			25	30	81.0		83.1	
26	16			26	24	77.9		80.0	
27	12			27	7	76.0		78.1	
28	3			28	0	74.5		76.5	
29	0			29	0	73.7		75.8	
30	0			30	0	74.0		76.1	
				31	0	71.6		73.6	
Mean:		6.4		Mean:		26.4	77.9	79.7	



## CALCIUM PLAGE AND SUNSPOT REGIONS

MAY 1965

May 1965	LAT.	MCMATH PLAGE NUMBER	RETURN OF REGION	CALCIUM PLAGE DATA					SUNSPOT DATA		
				CMP VALUES		HISTORY	AGE (ROTA- TIONS)	DATE FIRST SEEN	DURA- TION (DAYS)	CMP VALUES	
				AREA	INT.					AREA	COUNT
1.8	N09	7795 (1)	New	100	1	b — d	1	5/2	1		
2.1	S02	7792 (1)	New	(100)	(1.5)	b — d	1	4/29	1		
2.7	N20	7796 (1)	New	400	1	b — d	1	5/2	1		
3.2	N34	7797	New	200	1.5	b — d	1	5/2	4		
3.8	N35	7799 (2)	New	(400)	(3.5)	b / d	1	5/7	3	(40)	(6)
5.1	S08	7793 (1)	New	(100)	(1)	l — d	1	4/29	1		
5.6	N36	7798	New	(100)	(1)	b — d	1	5/6	2		
7.5	N27	7794	New	1400	3	l / l	1	5/1	14	(10)	(2)
9.5	S12	7805	New	(200)	(1.5)	b — l	1	5/11	5	(10)	(4)
9.9	N13	7806	New	(300)	(3)	b — l	1	5/13	3		
10.0	S05	7800 (1)	New	(100)	(1.5)	b — d	1	5/7	1		
11.0	S02	7811 (1)	New	(100)	(1.5)	b — d	1	5/15	1		
11.7	N21	7807	New	(200)	(1.5)	b — d	1	5/14	2		
12.1	N03	7804 (1)	New	(100)	(1)	b — d	1	5/10	1		
13.0	N29	7801	New	300	1	b V d	1	5/7	8		
14.9	N05	7802	7771	1300	2	l A d	3	5/8	12		
15.4	N21	7803	7779	800	3.5	l A l	2	5/9	13	180	4
16.3	S29	7808	New	100	1	b — d	1	5/14	2		
16.3	S23	7815 (1)	New	(100)	(1)	b — d	1	5/19	1		
16.6	N19	7813	New	(600)	(4)	b A l	1	5/18	5	(10)	(7)
16.8	N25	7819 (1)	New	(200)	(2.5)	b — d	1	5/20	1		
19.0	N08	7816	New	300	2.5	b \ d	1	5/19	4	10	5
19.7	S39	7822 (1)	New	(100)	(1)	b — d	1	5/22	1		
19.8	S36	7817	New	100	1	b — d	1	5/19	3		
20.0	N16	7820 (1)	New	300	1	b — d	1	5/20	1		
20.0	S10	7825 (1)	New	(100)	(1.5)	b — d	1	5/24	1		
20.9	S24	7810	7790	(200)	(1.5)	l \ d	2	5/14	5		
21.2	N23	7809	New	4000	3.5	l / l	1	5/14	14	290	55
21.3	N33	7814 (1)	New	(200)	(1)	b — d	1	5/18	1		
21.9	S42	7826 (1)	New	(100)	(1)	b — d	1	5/24	1		
23.0	N24	7812	New	3600	3	l / l	1	5/16	14	70	28
23.8	N19	7821 (1)	New	(200)	(1)	b — d	1	5/20	1		
24.0	N41	7829	New	(200)	(1)	b — d	1	5/27	2		
25.1	N20	7834 (1)	New	(100)	(2)	b — d	1	5/29	1		
25.5	S33	7823 (1)	New	(100)	(1)	b — d	1	5/22	1		
25.8	N33	7818 (1)	New	(300)	(1)	l — d	1	5/19	1		
25.9	N32	7830 (1)	New	(100)	(2)	b — d	1	5/28	1		
26.9	N07	7835	New	(200)	(2.5)	b — d	1	5/29	2		
28.3	S26	7841 (3)	New	(1400)	(3.5)	b — l	1	6/3	1		
29.0	N30	7824	New	(300)	(1)	l — d	1	5/22	4		
31.1	N29	7827	New	500	2.5	l A l	1	5/24	13		
31.9	S03	7831 (1)	New	(100)	(1.5)	b — d	1	5/28	1		

COMMERCE - STANDARDS - BOULDER

(1) These small and ephemeral plages were seen for only one day.

(2) Region 7799 may have formed in the same position as ephemeral plage 7797.

(3) Region 7841 forms on the disk very near the west limb.

No calcium spectroheliograms were secured at the McMath-Hulbert Observatory on May 17 and 22, 1965.

The equipment at Mt. Wilson is being overhauled, therefore no magnetic observations were made during the month of May 1965.

COMMERCE - STANDARDS - BOULDER

## PROVISIONAL CORONAL LINE EMISSION INDICES

MAY 1965

GMP May 1965	North East quadrant (observed 7 days earlier)				South East quadrant (observed 7 days earlier)				South West quadrant (observed 7 days later)				North West quadrant (observed 7 days later)				
	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	G <sub>6</sub>	G <sub>1</sub>	R <sub>6</sub>	R <sub>1</sub>	
1	3	4	10	18	3	3	x	11	15	x	x	x	x	x	x	x	x
2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	x	x	x	x	x	x	x	0	0	x	x	x	x	x	x	x	x
4	x	x	x	x	x	x	x	1	4	x	x	x	x	x	x	x	x
5	5	8	15	21	x	x	x	5	x	x	x	x	x	x	x	x	x
6	16	32	12	23	1	3	13	15	x	x	x	x	x	x	x	x	x
7	40	87	19	38	2	3	9	12	x	x	x	x	x	x	x	x	x
8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
9	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
10	x	x	x	x	12	18	x	x	12	19	x	x	x	x	x	x	x
11	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
12	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
13	9	16	14	13	x	x	x	x	7	14	16	x	x	x	x	x	x
14	15	44	15	17	x	x	x	x	5	14	11	x	x	x	x	x	x
15	x	x	x	x	x	x	x	x	x	x	x	0	0	x	x	x	x
16	8	13	11	16	x	x	x	x	x	x	x	x	x	x	x	x	x
17	x	x	12	14	x	x	x	x	8	12	x	x	x	x	x	x	x
18	6a	11a	x	x	0a	3a	x	x	x	x	x	x	x	x	x	x	x
19	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
20	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
21	x	x	x	x	x	x	x	x	x	x	x	6	x	0a	82	180	x
22	x	x	x	x	x	x	x	x	x	x	x	0a	x	80a	168a	4a	10a
23	x	x	x	x	x	x	x	x	x	x	x	5	x	0	11	25	4
24	x	x	x	x	x	x	x	x	x	x	x	5	x	x	x	x	10
25	x	x	x	x	x	x	x	x	x	x	x	5	x	x	x	x	20
26	x	x	x	x	x	x	x	x	x	x	x	5	8	10a	10	14	9a
27	x	x	x	x	x	x	x	x	x	x	x	7a	10	14	x	x	x
28	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
29	0a	7	13	13	0a	0a	x	x	14	17	x	x	x	x	x	x	x
30	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
31	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

x = no observations

\* = Yellow line emission

COMMERCE - STANDARDS - BOULDER

a = index computed from low weight data

# SOLAR FLARES

MAY 1965

OBSERVATORY	DATE MAY 1965	OBSERVED		UNIVERSAL TIME		APPROX. LAT.	MER. DIST.	IM- PACT REGION	DURA- TION MINUTES	MEASUREMENTS		TIME UT	MEAS. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. s <sub>a</sub>	REMARKS
		START	END	MAX. PHASE	MAX. PHASE					COND	MEATH. PLACE					
MITK	01	0432	0451	0927	N29 E90	7794	124 D	1-	2	0824	*23	1.31				G
KANZ	01	0723	E	0835 D	N27 E90	7794		1-	2	0925	*42	2.40				AG
ARCE	01	0824	E	0943 D	N29 E90	7794		1-	1	0934	*30	1.71				DG
ARCE	01	0925	E	1000 D	N30 E90	7794		1-	1	14.28	*25					E
CATA	01	0930	E	1000 D	N29 E90	7794		1-	C		*86					26
HUAN	01	1426		1437	N28 E85	7794		1-	C							CD
SACP	01	1427		1436 D	N28 E85	7794		1-	C							
KANZ	01	1547		1617 D	N28 E85	7794		1-	C							
SACP	01	1854		1907	N29 E80	7794		1-	C	2005	*20	1.00				19
LOCK	01	2001		2005	N30 E90	7794		1-	C							10
SACP	02	0008		0015	0010	N27 E76	7794	1-	C							
MITK	02	0045		0100	0051	N28 E78	7794	1-	C							
MANI	02	0045		0106	0051	N28 E80	7794	1-	2	0049	2.06					
KANZ	02	0740	E	0805	N28 E75	7794	25 D	1-	C	0051	*45	1.08				
MANI	02	0757		0812	0805	N28 E76	7794	1-	2	0805	*80	1.84				
MANI	02	0843	E	0850	N28 E76	7794	1-	2	0845	*25	*58					CEHJKR
OND	02	1207		1241	1214	N30 E64	7794	34	3	12.14						2.60
HUAN	02	1233	E	1240 D	N27 E69	7794	1-	P								E
HUAN	02	1405		1410	1407	N27 E71	7794	1-	C							D
HUAN	02	1743		1813	1800	N27 E63	7794	1-	C							D
HUAN	02	1928		2058	1945	N28 E65	7794	1-	C							DK
HUAN	02			2010												
LOCK	06	2140		2210	2158	N30 E80	7801	1-	C	2158	*10	*30				20
LOCK	07	0045		0112	0100	N30 E80	7801	1-	C	0100	*10	*30				20
ARCE	07	0842	E	0920 D	N34 W48	7799	1-	2	0910	*78	1.41					D
KANZ	07	1400	E	1402	N36 E46	7799	1-	C								18
SACP	07	1432		1510	1459	N36 W49	7799	1-	C	1442	*60	*90				E
HUAN	07	1436		1454	1442	N37 W48	7799	1-	C							D
HUAN	07	1444		1455 D	N36 E46	7799	1-	C								DH
HUAN	07	1511		1522	1602	N36 W49	7799	1-	C	1516	*25	*53				
MCMH	07	1557		1658		N35 W52	7799	1-	3	1602	*30	*60				
MITK	08	0241		0321	0253	N36 W58	7799	1-	C							D
MITK	08	0508		0512	0505	N36 W60	7799	1-	C							D
MITK	08	0717		0738	0721	N36 W59	7799	1-	C							E
MITK	08	0743		0800	0747	N36 W60	7799	1-	C							D
ARCE	08	0817	E	0902 D	N34 W62	7799	1-	C								
KANZ	08	0818	E	0850 D	N36 W60	7799	1-	C								
ARCE	08	1000	E	1000		N34 W62	7799	1-	2	0838	*56	1.35				
HUAN	08	1412	E	1516 D	N37 W62	7799	1-	P								E
MCMH	08	1420	E	1510	1438	N35 W67	7799	50 D	1	14.38	*80	2.40				EH
SACP	08	1423		1507	1437	N35 W63	7799	1-	C							20
KANZ	08	1450	E	1512	N36 W62	7799	22 D	1-	C							
MCMH	08	1543		1548	1544	N35 W63	7799	1-	C	1544	*50	1.50				EH
MCMH	08	1710	E	1723 D	N35 W63	7799	1-	P								E
HUAN	08	1720	E	1800 D	N35 W69	7799	25 D	1	1715	*50	1.50					
MCMH	08	1805	E	1830 D	1807	N35 W69	7799	1-	P	1735	*20					
HUAN	08									1807	*80	2.40				

## SOLAR FLARES

MAY 1965

OBSERVATORY	DATE MAY 1965	OBSERVED UNIVERSAL TIME		APPROX. LAT.	APPROX. LONG. DIST.	LOCATION	MC-MATH PLAGE REGION	DURA- TION MINUTES	IM- POR- TANCE	MEASUREMENTS			MAX WIDTH Ha	MAX INT. ...	REMARKS
		START	END							TIME	MEAS AREA Sq Deg	MEAS CORR AREA Sq Deg			
HUAN	08	1806	1815 D	1919		N36 W63	7799	1-	1-	P 1811	*25	1.*20			E
MCMA	08	1906	1934 D	1911		N37 W70	7799	1-	1-	C 1911	*40				EH
HUAN	08	1910	2013 D			N36 W63	7799	1-	1-	P 1916	*34				E
HUAN	08	2053 E	2055 D			N36 W63	7799	1-	1-	P 2011	*27				E
MCMA	08	2054	2100		2055	N37 W70	7799	1-	1-	P 2053	*20				D
CATA	09	1000 E	1110 D	1002		N34 W78	7799	1-	2	P 2055	*30	1.*00			
MCMA	09	1157	1214	1202		N35 W88	7799	1-	2	C 2055					132
MCMA	09	1259	1308	1302		N35 W88	7799	1-	2	C 2055					D
HUAN	09	1435	1455			N37 W80	7799	1-	2	C 2055					D
HUAN	09	1511	1531	1520		N37 W80	7799	1-	2	C 2055					D
SACP	09	1515	1531	1525		N35 W76	7799	1-	2	C 2055					D
MCMA	09	1516	1550	1528		N35 W88	7799	1-	2	C 2055					D
MCMA	09	1523	1550	1528		N23 E86	7803	1-	2	C 2055					D
MCMA	09	1612 E	1629 D	1629		N23 E86	7803	1-	1	P 2055					D
HUAN	09	1615	1629			N38 W85	7799	1-	1	C 2055					D
HUAN	09	1859	1931	1912		N37 W90	7799	1-	1	C 2055					D
MCMA	09	1900 E	1914 D	2043		N35 W90	7799	1-	1	P 2055					D
HUAN	09	2016	2019	2027		N38 W90	7799	1-	1	C 2055					D
CATA	10	0620	0930 D	0818		N36 W90	7799	190 D	1	C 2055					118
ARCE	10	0805 E	0850 D			N34 W90	7799	80 D	1-	C 2055					FG
ISTA	10	0740 E	0900			N34 W90	7799	80 D	1-	C 2055					
ARCE	10	0930 E	0935 D			N34 W90	7799	33 D	1+	C 2055					
KAND	10	1145 E	1218			N36 W90	7799	33 D	1+	D 2055					
KAND	10	1246	1252	1248		N35 W90	7799	33 D	1-	D 2055					
MITK	12	0459	0515	0502		N24 E46	7803	1-	1	C 2055					GH
MITK	12	0633	0637	0635		N22 E41	7803	1-	1	C 2055					DGH
ARCE	12	0828 E	0828 E			N23 E42	7803	1-	1	C 2055					
CAPS	12	1301	1316			S15 W33	7805	1-	1	C 2055					G
KANZ	12	1320 E	1415 D	2047		S15 W40	7805	1-	1	C 2055					E
MCMA	12	2044	2105 D	2047		N22 E35	7803	1-	2	C 2055					EH
HUAN	12	2045	2103 D	2047		N21 E35	7803	1-	2	P 2055					EK
HUAN	12	2125 E	2137 D	2058		N20 E34	7803	1-	1	P 2055					
SACP	12	2343 U	2359 U	2355		N23 E32	7803	1-	1	C 2055					
KAND	14	0930	1007 E			N28 E90	7809	1-	1	D 2055					153
OTTA	14	1037 E	1113	1053		S15 W64	7805	35	1+	C 2055					
KAND	14	1040	1115	1047		S13 W65	7805	35	1+	D 2055					
CAPS	14	1046 E	1103			S10 W60	7805	35	1-	D 2055					
KAND	14	1120	1126			N28 E90	7809	6	1-	D 2055					
KAND	14	1136	1146			N28 E90	7809	6	1-	D 2055					
CATA	15	0612 E	0700 D	0612		N21 E02	7803	1-	3	P 2055					
MCMA	15	1058 E	1105 D			N20 E76	7809	1-	3	P 2055					
HUAN	15	1200	1207	1203		N25 E90	7809	1-	2	C 2055					
SACP	15	1355	1402	1356		N21 W02	7803	1-	2	C 2055					

# SOLAR FLARES

MAY 1965

OBSERVATORY	DATE MAY 1965	UNIVERSAL TIME			LOCATION			DURA- TION MINUTES	IN- POR- TANCE	MEASUREMENTS			MAX. INT. %	REMARKS	
		START	END	MAX. PHASE	APPROX. LAT.	MER. PLATE REGION	MEAS. DIST.			TIME — UT	MEAS. SQR. DEG.	CORR. AREA SQR. DEG.	MAX. WIDTH HO		
LOCK	15	1754	1815	1805	N26	E90	7809	55	1-	C	1805	*30	1.50	HJ	
LOCK	15	1900	1955	1917	N26	E90	7809	55	1-	C	1917	.60	3.00	HJ	
LOCK	16	0103	0129	0111	N25	E90	7812	26	1	C	0111	.60	3.00	HJ	
CAPS	16	0600	E	0135	N26	E90	7812	95	0	2	0615	2.00	2.00	HJK	
CATA	16	0630	E	1.00	D	0900	N25	E90	7812	330	D	0900	1.62	9.21	J
CAPS	16	0738	E	0942	N26	E90	7812	124	2	3	0805	*90	1.54	HJK	
KANZ	16	0755	E	0940	D	N24	E89	7812	95	D	1+			A	
ARCE	16	0810	E	0910	D	N26	E90	7812	10	D	2	1	0.17	6.44	
ARCE	16	0830	E	0915	D	N26	E90	7812	45	D	1	0.90	*69	3.92	
CAPS	16	1042	E	1245	N26	E88	7812	123	2	3	1.130	1.00	HJK		
MCMA	16	1217	E	1515	N26	E90	7812	178	D	1+	2 P	1.00	FH		
HUAN	16	1243	E	1301	N25	E90	7812	1-	C	1219			DK		
HUAN	16	1258	E	1402	N26	E86	7812	67	1	3	1258	*20			
CAPS	16	1255	E	1336	D	N23	E86	7812	22	D	2+			E1	
WEND	16	1314	E	1342	D	N24	E88	7812	26	D	1+			CH	
KANZ	16	1316	E	1400	N25	E90	7812	1-	C	1358	*34		DK		
HUAN	16	1329	E	1339	N25	E90	7812								
HUAN	16	1353	E	1358	N24	E90	7812								
HUAN	16	1427	E	1506	N24	E90	7812								
HUAN	16	1513	E	1518	N24	E90	7812								
CAPS	16	1515	E	1538	N26	E86	7812	23	D	1-	2	1518	*20	D	
MCMA	16	1925	E	1933	D	N26	E88	7812	1-	P	2	1928	*90	EHI	
MCMA	16	1954	E	2000	D	N25	E88	7812	1-	P	2	2000	*20	D	
HUAN	16	1957	E	2006	N20	E90	7812	1-	C	2000			D		
MCMA	16	2032	E	2057	D	N25	E88	7812	1-	P	2	2032	*25	D	
HUAN	16	2034	E	2045	D	N24	E90	7812	35	1	C	2037	*70	J	
LOCK	16	2037	E	2112	N24	E90	7812	35	1	C	2050	*70	3.50		
HALE	16	2214	E	2240	D	N23	E90	7812	1-	P	3	2228	*90	K	
HALE	16	2215	E	2248	N24	E90	7812	85	1	C	2225	*70	H		
LOCK	16	2303	E	2338	N24	E90	7812	35	1	C	2314	*90	H		
MITK	16	2312	E	2315	N25	E85	7812	4	D	2	P	4.50	20	B	
HALE	17	0009	D	0018	N24	E90	7812	19	D	1	2 P	0.018	3.50	H	
LOCK	17	0030	D	0119	N24	E90	7812	49	1	C	0102	1.00	5.00	20	
HALE	17	0032	E	0058	N24	E90	7812	26	D	1	P	0.035	1.70	H	
MITK	17	0043	E	0053	N26	E88	7812	10	D	1+	C				
HALE	17	0059	D	0105	N24	E90	7812	6	D	1	P	0.104	1.70		
MITK	17	0103	E	0117	N24	E88	7812	14	D	1	V	0.108	1.54		
MITK	17	0124	E	0143	N26	E85	7812	19	1	V	0.131	1.54			
MITK	17	0152	E	0210	N26	E85	7812	18	1	V	0.152	1.23			
MITK	17	0226	E	0240	N24	E88	7812	1-	C	0229	*26	4.74	E		
MITK	17	0240	E	0321	N26	E85	7812	41	1	V	0.250	1.23	1.96		
MITK	17	0324	E	0422	N25	E80	7812	58	1	V	0.350	2.01	3.16		
KODA	17	0340	E	0402	D	N26	E50	7809	22	D	1	C	1.30	120	
MITK	17	0405	D	0418	N26	E50	7809	1-	C	0.23		2.29	D		
MITK	17	0433	E	0452	N26	E85	7812	19	1	C	0.23	3.69	107		
MITK	17	0518	E	0545	N26	E82	7812	27	1	C	0.23	4.36	D		

## SOLAR FLARES

MAY 1965

OBSERVATORY	DATE MAY 1965	OBSERVED TIME		APPROX LAT	MER DUST	DURA- TION MINUTES	IM- PON- DENCE	TIME	MEASUREMENTS			MAX INT %	REMARKS
		START	END						MEAS AIRC S <sub>1</sub> Deg	COEF AIRC S <sub>1</sub> Deg			
MITK	17	0603	0619	0612	N26 E82	7812	16	1	1	0.636	•38	•60	E
CATA	17	0630	0656	0636	S25 E47	7810	1	1	3	0.638	•28	•90	CEG
ONDR	17	0637	E 0648	0648	S22 E48	7810	1	1	1	0.646		1•30	D
CATA	17	0635	0655	0646	N24 E80	7812	1	1	C			155	
MITK	17	0635	0648	0645	N26 E83	7812	1	1	C			182	D
MITK	17	0653	0713	0705	N26 E76	7812	1	1	C			155	D
KANZ	17	0755	E 0820	0820	N23 E80	7812	25	D				4•19	
ARCE	17	0810	E 0828	D	N26 E79	7812	18	D	3	0.810	1•31		
KAND	17	0923	1000	1000	N26 E75	7812	37	2	D				
KAND	17	0948	0957	0957	N27 E90	7812	1	1	D				
CAPS	17	1001	1008	1008	N25 E80	7812	1	1	D			201	D
KAND	17	1002	1039	1039	N26 E75	7812	37	2	D				
KAND	17	1045	1155	1155	N26 E75	7812	70	2	D				
KAND	17	1049	1052	D	N23 E80	7812	1	1	D				
KAND	17	1105	1110	1110	N24 E68	7809			D				
KAND	17	1112	1119	1119	N28 E90	7812			D				
KAND	17	1200	1215	1215	N26 E75	7812	2	2	D				
KAND	17	1216	1228	1228	N26 E75	7812	12	1	D				
SACP	17	1302	1313	1307	N26 E81	7812	1	1	D				
HUAN	17	1323	1334	1327	N23 E73	7812	1	1	C			20	E
HUAN	17	1344	1349	1345	N23 E72	7812	1	1	C			45	D
HUAN	17	1354	1359	1356	N23 E72	7812	1	1	C			25	D
HUAN	17	1406	E 1418	D	N23 E72	7812	1	1	C			35	D
CAPS	17	1430	E 1452	D	N26 E50	7809	22	D	1	P	1•44	•20	D
HUAN	17	1431	E 1440	1436	N25 E48	7809	1	1	C			189	CE
SACP	17	1432	1434	1327	N23 E73	7812	1	1	C			45	E
HUAN	17	1434	1349	1345	N23 E72	7812	1	1	C			45	D
HUAN	17	1435	1359	1356	N23 E72	7812	1	1	C			25	D
HUAN	17	1446	E 1458	D	N23 E72	7812	1	1	C			35	D
CAPS	17	1450	E 1451	1448	N23 E78	7812	1	1	C			45	D
HUAN	17	1445	E 1451	1448	N23 E69	7812	1	1	C			35	E
SACP	17	1445	E 1452	1448	N25 E68	7812	1	1	C			34	E
HUAN	17	1455	E 1452	1448	N25 E68	7809	1	1	C			61	19
SACP	17	1656	1903	1903	N21 E43	7809	1	1	C			68	23
HALE	17	1859	1903	1901	N21 E43	7809	1	1	C			61	H
HALE	17	1859	1907	1902	N21 E40	7809	1	1	C			1•00	20
LOCK	17	1859	1907	1902	N22 E45	7809	1	1	C			50	JL
HUAN	17	1901	E 1903	1903	N22 E76	7812	1	1	P			30	D
HUAN	17	1902	1905	D	N23 E62	7812	1	1	P			20	D
HALE	17	2027	2036	2032	N20 W19	7813	1	1	P			20	D
SACP	17	2321	2333	2325	N27 E65	7812	1	1	C			20	D
MITK	17	2348	0006	2355	N27 E65	7812	1	1	C			17	19
MITK	18	0159	0213	0204	N23 E42	7809	1	1	C			D	D
MANI	18	0314	0340	0322	N25 E66	7812	1	1	C			D	D
MITK	18	0322	E 0340	0326	N24 E69	7812	1	1	C			50	E
MITK	18	0459	E 0530	0512	N27 E38	7809	31	1	C			95	E
MITK	18	0529	0558	0542	N25 E65	7812	26	1	C			600	D
MITK	18	0548	E 0612	0552	N25 E68	7812	33	1	C			182	CEH
MANI	18	0625	E 0700	0640	N26 E65	7812	1	1	C			36	DH
MITK	18	0627	E 0652	D	N23 E62	7812	22	D	1	C		155	DH
WEND	18	0630	E 0652	D	N25 E64	7812	16	D	3	0.643	•80	2•10	
CAPS	18	0637	E 0650	0645	N24 E65	7812	1	1	C			36	
CATA	18	0638	E 0700	D	N26 E64	7812	1	1	C			16	
BUCA	18	0648	E 0700	D	N26 E64	7812	1	1	C			600	

# SOLAR FLARES

MAY 1965

OBSERVATORY	DATE	OBSERVED TIME			LOCATION	APPROX. LAT.	IM- PLAGE REGION	DURA- TION - MINUTES	IM- POR- TANCE - MINUTES	MEASUREMENTS			MAX WIDTH Ha	MAX INT. Ha	REMARKS	
		MAY 1965	START	END						TIME	MEAS AREA Sq. Deg.	CORR AREA Sq. Deg.				
KAND	18	0821	0836	0834	N21 W45	7803	1-	D	0854	•50	1.08		166	E		
KAND	18	0822	0834	0846	N18 W23	7813	1-	D	0854	•50	1.08		166	E		
CATA	18	0824	0858	D	N25 E63	7812	1-	D	0854	•50	1.08		166	E		
KAND	18	0826	0850	D	N23 E64	7812	24	D	0854	•50	1.08		166	E		
BUCA	18	0832	E	0850	N26 E64	7812	1-	D	0854	•50	1.08		166	E		
KANZ	18	0836	0926		N28 E67	7812	1-	D	0854	•50	1.08		166	E		
CAPS	18	0837	0907		N20 W23	7813	1-	D	0854	•50	1.08		166	E		
CATA	18	0838	0848	0843	N20 W23	7813	26	D	0854	•50	1.08		166	E		
KAND	18	0838	0904	0839	N18 W23	7813	1-	D	0854	•50	1.08		166	E		
BUCA	18	0839	E	0848	D	N20 W20	7813	1-	D	0854	•50	1.08		166	E	
HERS	18	0840	E	0850	N20 W20	7813	1-	D	0854	•50	1.08		166	E		
KANZ	18	0840	0905	D	N20 W22	7813	25	D	0854	•50	1.08		166	E		
BUCA	18	0836	E	0850	D	N21 W40	7803	1-	D	0843	•44	•80		178	E	
CATA	18	0840	0849	D	N22 W40	7803	1-	D	0843	•44	•80		178	E		
KANZ	18	0842	0951		N21 W41	7803	1-	D	0845	•50	•70		178	E		
KAND	18	0843	0901		N21 W45	7803	18	D	0845	•50	•70		178	E		
CAPS	18	0843	0907		N23 W41	7803	1-	D	0845	•50	•70		178	E		
KANZ	18	0848	E	0902	D	N26 E61	7812	1-	D	0905	•50	1.20		178	E	
CAPS	18	0902	0926		N27 E60	7812	1-	D	0905	•50	1.20		178	E		
CAPS	18	0943	1030	D	N20 W23	7813	1-	D	0955	•20	•20		178	E		
CAPS	18	0959	1019	D	N22 W41	7803	1-	D	1004	•90	1.40		178	E		
MCMA	18	1222	1245	D	N22 E30	7809	1-	D	1226	•30	•40		178	E		
CAPS	18	1224	E	1236	N22 E32	7809	1-	D	1233	•90	1.20		178	E		
MCMA	18	1234	1238		N27 E65	7812	1-	D	1236	•30	•70		178	E		
KANZ	18	1415	E	1455	N19 E31	7809	1-	D	1450	•20	•20		178	E		
HOAN	18	1445	1457	1450	N23 E58	7812	1-	D	1450	•20	•20		178	E		
KANZ	18	1447	1503		N25 W60	7803	1-	D	1450	•20	•20		178	E		
KANZ	18	1526	1550		N19 E29	7809	24	D	1450	•20	•20		178	E		
KANZ	18	1542	1549		N25 W57	7803	1-	D	1450	•20	•20		178	E		
SACP	18	1625	1645	1635	N21 E28	7809	1-	D	1450	•20	•20		178	E		
HUAN	18	1626	E	1630	D	N20 E28	7809	1-	D	1450	•20	•20		178	E	
MCMA	18	1627	1645	1630	N22 E26	7809	1-	D	1450	•20	•20		178	E		
MCMA	18	1721	1730	1724	N27 E63	7812	1-	D	1724	•30	•40		178	E		
SACP	18	1737	1748	D	N19 E40	7809	1-	D	1724	•30	•40		178	E		
MCMA	18	1748	1755	1750	N27 E63	7812	1-	D	1750	•26	•26		178	E		
MCMA	18	1820	1835	1829	N22 E27	7809	1-	D	1829	•30	•40		178	E		
MCMA	18	1844	1915	1856	N22 E27	7809	1-	D	1856	•60	•70		178	E		
LOCK	18	1849	1902	1850	N19 E24	7809	1-	D	1855	•60	•60		178	E		
SACP	18	1850	1917	U	N20 E27	7809	1-	D	1855	•75	1.86		178	E		
HALE	18	1852	1901	1857	N18 E26	7809	1-	D	1857	•60	•60		178	E		
LOCK	18	1854	1911	1902	N18 E28	7809	1-	D	1902	•50	•50		178	E		
HUAN	18	1915	E	1923	N20 E28	7809	1-	D	1920	•20	•25		178	E		
MCMA	18	2000	2015	2109	N25 E29	7809	1-	D	2003	•20	•30		178	E		
LOCK	18	2107	2120	2109	N25 E29	7809	1-	D	2109	•20	•30		178	E		
SACP	18	2326	2351	D	N19 E34	7813	1-	D	2348	•17	•47		178	E		
MANN	18	2334	E	2355	N20 W34	7813	1-	D	2348	•17	•19		178	E		
MANN	19	0731	E	0740	N24 E53	7812	1-	D	0733	•17	•24		178	E		
BUCA	19	0731	E	0742	D	N26 E50	7812	1-	D	0736	•82	1.00		178	E	
CATA	19	0735	D	0755	N24 E50	7812	1-	D	0736	•82	1.00		178	E		
BUCA	19	1036	E	1044	D	N24 E24	7809	1-	D	0736	•70	1.00		178	E	

## SOLAR FLARES

MAY 1965

OBSERVATORY	DATE MAY 1965	OBSERVED UNIVERSAL TIME		APPROX. LAT MER DIST	LOCATION	DURA- TION MINUTES	IM POR- TANCE	MCNUTH PLAGE REGION	MEAS. AREA Sq Deg	CORR. AREA Sq Deg	MAX. WIDTH H <sub>9</sub>	MAX. INT. %	REMARKS	
		START	END											
MCMIA	19	1128	1133	1129	N21 E17	7809	1-	2 C	1129	*20	*20	E		
MCMIA	19	1140	1149	1141	N23 E17	7809	1-	2 C	1141	*20	*20	D		
SACP	19	1220	1237	1222	N20 E18	7809	1-	2 C	1222	*36	*37			
MCMIA	19	1222	1229	1223	N21 E17	7809	1-	2 C	1323	*20	*20	E		
MCMIA	19	1319	1335	1422	N19 W42	7813	1-	2 C	1512	*30	*40	S		
SACP	19	1423	1455	1429	N26 E22	7809	1-	2 C	1511	*50	*70	E		
HAUN	19	1424	E	D	N25 E22	7809	1-	3 P	1426	*65	*78	E		
CAPS	19	1424	E	1446	N24 E25	7809	1-	3 P	1430	1*60	1*50	CF		
MCMIA	19	1424	E	1451	N27 E23	7809	1-	2 C	1427	*50	*60	S		
SACP	19	1508	1521	1511	N26 E46	7812	1-	1 C	1512	*56	*74			
HAUN	19	1509	1614	1511	N24 E46	7812	1-	1 C	1511	*30	*50	E		
MCMIA	19	1509	1516	1511	N27 E47	7812	1-	2 C	1537	*40	*70	EH		
CAPS	19	1530	1552	1542	N20 W41	7813	1-	3 C	1534	*30	*60	D		
MCMIA	19	1532	1542	1534	N19 W44	7813	1-	1 C	1534	*30	*40	S		
MCMIA	19	1600	1612	1602	N27 E23	7809	1-	2 C	1602	*40	*50			
SACP	19	1600	1619	U	N26 E22	7809	1-	1 C	1602	*61	*65			
HALE	19	1723	1733	1725	N20 E15	7809	1-	1 C	1803	*26	*26			
HALE	19	1801	E	1820	1803	7813	42	3 P	1827	1*60	1*90	F		
HALE	19	1820	1902	1827	N24 E43	7812	1-	3 C	1826	2*00	2*60			
LOCK	19	1821	1845	1826	N25 E41	7812	1-	3 C	1826	*80	*80	20	H	
MCMIA	19	1821	1850	D	1824	N27 E45	7812	29 D	2 C	1824	2*10	S		
HAUN	19	1821	E	1904	1602	N23 E46	7812	43 D	1 C	1832	1*35	E		
SACP	19	1821	E	1908	1826	N25 E44	7812	1-	3 C	1852	1*40	1*76		
HALE	19	1848	1856	1852	N27 E42	7812	1-	3 C	1923	*60	*80			
MCMIA	19	1902	1957	1923	N18 W42	7813	1-	3 C	1924	*50	*70	SHK		
HALE	19	1918	1952	1924	N17 W41	7813	1-	3 C	1924	1*00	1*20			
HALE	19	1948	2010	1824	N20 E12	7809	1-	3 C	1953	*40	*40			
MCMIA	19	1951	2002	1953	N20 E20	7809	1-	2 C	1953	*20	*20	D		
SACP	19	1951	2009	1956	N20 E13	7809	1-	2 C	2002	*43	*44			
LOCK	19	1952	2007	2002	N21 E13	7809	1-	2 C	2002	*30	*30			
OTTA	19	2002	E	2009	N20 E12	7809	1-	2 C	2009	*36	*40			
HALE	19	2007	2020	2009	N22 E12	7809	1-	2 C	2009	*40	*40			
OTTA	19	2105	2124	D	N20 E13	7809	1-	1 C	2115	*53	*53	HE		
SACP	19	2106	2132	2114	N20 E13	7809	1-	2 C	2115	*61	*62			
MCMIA	19	2108	2120	2115	N20 E20	7809	1-	2 C	2115	*50	*50	E		
HALE	19	2109	2125	2115	N20 E13	7809	1-	3 C	2115	1*20	1*20			
HALE	20	0001	0009	0006	N18 W44	7813	8	1 C	0006	2*00	2*40	E		
MITK	20	0001	E	0012	D	N18 W45	7813	1-	3 C	0014	2*50	3*00		
HALE	20	0009	0030	0014	N21 W34	7813	21	1 C	0006	1*30	1*56			
MANI	20	0005	E	0040	L	N24 E16	7809	1-	3 P	0139	*80	*80		
HALE	20	0138	D	0139	N19 W46	7813	43 D	1 C	0603	1*00	1*30			
BUCA	20	0556	E	0639	D	N21 W46	7813	1-	2 P	0622	1*60	2*50		
MANI	20	0600	E	0626	0603	N21 W46	7813	21 D	1 C	0622	1*60	2*50		
CAPS	20	0636	D	0701	D	N19 W48	7813	1-	3 C	0139	*80	*90		
BUCA	20	0652	E	0840	D	N22 E09	7809	1-	1 C	1055	*15	*20		
WROC	20	0832	E	0840	D	N26 E32	7812	1-	1 C	1215	*24	*28		
WROC	20	0838	E	0840	D	N23 E10	7809	1-	1 C	1215				
KAND	20	0853	D	0857	1055	N17 W50	7813	1-	1 C	1215				
OTTA	20	1107	1206	1425	N26 E35	7812	1-	1 C	1215					
OTTA	20	1206												

# SOLAR FLARES

MAY 1965

OBSERVATORY	DATE MAY 1965	OBSERVED UNIVERSAL TIME			APPROX. LAT.	MAX. PHASE	DURA- TION — MINUTES	IM- POR- TANCE	MEASUREMENTS	REMARKS	
		START	END	MAX. PHASE					COND.	TIME UT	
KAND	20	1210	1227	1212	N24	E24	7812	17	1	6	
KAND	20	1236	1255	N24	E24	7812	1-	1-	C	1248	*41
HUAN	20	1241	1300	1248	N24	E30	7812	1-	C	30	19
SACP	20	1314	U	1339	N25	E35	7812	1-	C	26	30
HUAN	20	1321	1325	N25	E35	7812	1-	C	1325	27	
MCMA	20	1405	1413	1406	N24	E36	7812	1-	2	20	20
SACP	20	1405	1418	0	N25	E09	7809	1-	C	65	18
OTTA	20	1405	1421	1406	N25	E09	7809	1-	C	28	16
OTTA	20	1407	1423	1417	N24	W49	7819	1-	2	1417	12
OTTA	20	1440	1501	1446	N27	E30	7812	21	C	1446	90
SACP	20	1441	1452	1445	N27	E30	7812	1-	C	99	113
MCMA	20	1441	1455	1444	N28	E32	7812	1-	2	80	10
HUAN	20	1441	1456	1445	N26	E30	7812	1-	C	50	67
OTTA	20	1502	1516	1508	N27	E33	7812	1-	C	1508	12
OTTA	20	1535	1553	1537	N27	E33	7812	1-	C	1537	13
OTTA	20	1548	1557	1550	N28	E09	7809	1-	C	1550	24
OTTA	20	1602	1643	1604	N27	E32	7812	1-	C	1604	25
HUAN	20	1603	1609	1605	N25	E35	7812	1-	C	1605	20
OTTA	20	1647	1733	1649	N22	E02	7809	1-	C	1649	04
MCMA	20	1700	1711	1705	N27	E35	7812	1-	1	1705	20
OTTA	20	1702	1706	1705	N27	E32	7812	1-	2	1706	18
HUAN	20	1702	1712	1705	N25	E35	7812	1-	C	1705	20
HUAN	20	1748	1801	1754	N25	E35	7812	1-	C	1754	20
LOCK	20	1909	1918	1912	N22	E00	7809	1-	C	1912	23
HALE	20	1909	1921	1911	N23	W01	7809	1-	1	1911	40
MCMA	20	1910	1916	1911	N23	E00	7809	1-	C	1911	20
SACP	20	1910	U	1917	N22	E00	7809	1-	C	1706	20
SACP	20	2033	2100	U	2039	N19	W25	7813	1-	C	1705
MCMA	20	2040	2057	2042	N23	E03	7809	1-	2	2042	20
MCMA	20	2125	2130	2127	N27	E33	7812	1-	2	2127	30
MCMA	20	2215	2228	2218	N23	E03	7809	1-	3	2218	60
MCMA	20	2229	2247	2241	N26	E03	7813	1-	C	2231	20
SACP	20	2241	2258	2248	N26	E03	7809	1-	C	41	42
MCMA	20	2245	2256	2247	N25	E05	7809	1-	2	50	60
SACP	20	2320	2357	D	2323	N19	W23	7813	37	1.62	47
MITK	20	2321	E	2326	D	N18	W60	7813	5	P	20
MANI	20	2338	E	0040	N20	W59	7813	1-	2	1.00	40
SACP	20	2330	2340	2331	N27	E30	7812	1-	C	52	59
MANI	20	2333	E	2355	N25	E04	7809	1-	2	33	18
SACP	21	0011	U	0045	U	N18	W59	7813	1-	C	1.05
MANI	21	0100	0110	0102	N05	E29	7816	1-	C	52	58
MANI	21	0105	0120	0112	N20	W58	7813	1-	2	33	18
WROC	21	0736	E	0840	D	N19	W63	7813	64	D	60
KAND	21	0807	E	0952	D	N19	W64	7813	105	D	
WROC	21	0930	E	0935	D	N25	E22	7812	1-	2	
WROC	21	0930	E	0935	D	N23	W02	7809	5	D	
MCMA	21	1106	E	1149	1134	N24	W06	7809	1-	C	1137
OTTA	21	1108	1214	1124	N22	E17	7812	1-	C	1124	
WROC	21	1113	E	1123	D	N23	W02	7809	10	D	10
OTTA	21	1124	1147	1137	N23	W05	7809	1-	C	1137	44

## SOLAR FLARES

MAY 1965

OBSERVATORY	DATE MAY 1965	OBSERVED UNIVERSAL TIME		LOCATION		IM- POR- TANCE	DURA- TION - MINUTES	OBS COND	TIME UT	MEAS		MEASUREMENTS		MAX WIDTH HO	MAX INT %	REMARKS	
		START	END	LAT. MER DIST	APPROX PLATE REGION					AREA Sq Deg	CORR AREA Sq Deg						
OTTA	21	1146	1156	1148	N25 E18	7812	1-	C	1148	•18	•19						
OTTA	21	1156	1251	1221	N25 W05	7809	1-	C	1221	•60	•61					E	
OTTA	21	1213	1235	1214	N08 W32	7816	1-	C	1214	•23	•24					F	
OTTA	21	1358	1403	1359	N19 W65	7813	1-	C	1359	•18	•31						
OTTA	21	1441	1441	1450	N26 E20	7812	1-	C	1440	•12	•13					D	
OTTA	21	1442	1454	1444	N25 E22	7812	1-	C	1444	•10	•10					EK	
MCMIA	21	1444	1509	1449	N21 W66	7813	1-	C	1459	•40	•40					D	
MCMIA	21	1457	1502	1458	N18 W68	7813	1-	C	1458	•20	•60						
OTTA	21	1457	1505	1458	N17 W67	7813	1-	C	1458	•27	•50						
SACP	21	1503	1503	1459	N18 W65	7813	1-	C	1531	•61	•06					20	
OTTA	21	1526	1535	1531	N26 E10	7812	1-	C	1533	•12	•12					D	
MCMIA	21	1531	1536	1533	N25 E12	7812	1-	C	1530	•20	•20					D	
MCMIA	21	1526	1540	1530	N20 W66	7813	1-	C	1530	•60	•60					D	
HUAN	21	1528	1536	1531	N21 W65	7813	1-	C	1531	•20	•20					D	
OTTA	21	1529	1536	1536	N19 W65	7813	1-	C	1531	•18	•31						
OTTA	21	1554	1607	1557	N23 W08	7809	1-	C	1557	•42	•43					D	
HUAN	21	1714	1730	D	N18 W68	7813	1-	P	1726	•20	•20					F	
OTTA	21	1722	E	1736	N18 W68	7813	1-	C	1722	•60	•06					D	
OTTA	21	1814	1835	D	1825	N18 W69	7813	1-	C	1825	•36	•67					E
MCMIA	21	1849	1905	1855	N25 W08	7809	1-	C	1855	•40	•40					S	
HALE	21	1849	1906	1856	N24 W10	7809	1-	C	1856	•70	•70						
HALE	21	1852	1908	1908	N18 W70	7813	1-	C	1900	•40	•40						
OTTA	21	2026	E	2029	D	N24 W10	7809	1-	C	2027	•18	•18					D
MCMIA	21	2040	E	2051	2042	N18 W70	7813	1-	C	2042	•20	•60					D
HALE	21	2047	E	2059	N17 W72	7813	1-	P	2047	•70	•50					D	
MCMIA	21	2120	2158	2125	N21 W10	7809	1-	C	2125	•20	•20						
HALE	21	2126	2129	2129	N23 W11	7809	1-	C	2127	•40	•40						
HALE	21	2128	2155	2136	N17 W71	7813	1-	C	2136	•60	•20						
HALE	21	2244	E	2319	2252	N18 W74	7813	1-	P	2252	•60	•40					
HALE	21	2342	2347	2343	N23 W11	7809	1-	C	2343	•10	•10						
HALE	21	2347	0025	0002	N23 W09	7809	1-	C	0002	•50	•50						
SACP	22	0000	0017	0005	N24 W10	7809	1-	C	52	•53	19						
MANI	22	0002	E	0010	N28 W06	7809	1-	V	0004	•25	•25					D	
MITK	22	0003	E	0016	0003	N23 W10	7809	13 D	V	0003	•82	•93					
HALE	22	0052	0104	0054	N17 W75	7813	1-	C	0054	•40	•00						
SACP	22	0053	0101	0054	N16 W72	7813	1-	P	35	•72	18						
HALE	22	0115	E	0131	D	N19 W70	7813	1-	C	0123	•30	•60					
HALE	22	0117	0147	0123	N18 W74	7813	1-	C	0153	•00	•00						
HALE	22	0151	0204	0153	N18 W75	7813	13	C	0153	•00	•00						
HALE	22	0205	0222	0208	N18 W75	7813	1-	C	0208	•30	•70						
HALE	22	0232	0237	0234	N18 W73	7813	1-	C	0234	•20	•50						
HALE	22	0250	0259	0253	N18 W75	7813	1-	C	0253	•30	•70						
HALE	22	0354	0400	0356	N18 W80	7813	1-	C	0356	•20	•50						
WROC	22	0655	E	0720	D	N24 E10	7812	21	C	0730	•72	18					
ONDR	22	0727	0748	0733	N27 E12	7812	1-	C	0730	•72	18						
WROC	22	0744	E	0814	D	N20 W73	7813	1-	C	0810	•56	1.01					
WEND	22	0802	E	0810	N21 W79	7813	1-	C	0810	•01	•01						
CATA	22	0805	0830	0810	N18 W70	7813	1-	C	0810	•01	•01						
WROC	22	0928	E	1136	D	N20 W75	7813	1-	C	0928	•01	•01					

# SOLAR FLARES

MAY 1965

OBSERVATORY	DATE	OBSERVED		UNIVERSAL TIME		LOCATION		DURA- TION MINUTES	OBS. COND.	TIME U.T.	MEAS.		MEASUREMENTS		REMARKS	
		START	END	MAX PHASE	APPROX. LAT.	MER. DIST.	ME-MATH PLATE REGION				AREA Sq. Dg.	MAX. WIDTH H <sub>A</sub>	MAX. INT. %			
SACP	22	1309	1327	1317	N18	W78	7813	1-	C	P	1321	*35	*90	20	D	
HUAN	22	1311	1337	1317	N19	W85	7813	1-	C	C	1317	*30	*50	160	C	
MCMA	22	1313	1329	1317	N18	W85	7813	1-	C	C	1321	*25	*80	160	C	
CAPS	22	1313	E	1334	N17	W79	7813	1-	P	P	1434	*30	*30	160	E	
HUAN	22	1425	1437	1437	N19	W85	7813	1-	P	P	1635	*25	*25	160	D	
HUAN	22	1633	E	1640	N19	W85	7813	1-	C	C	1644	*41	*61	19	H	
SACP	22	1634	1704	1642	N23	W01	7812	1-	C	C	1644	*18	*18	19	H	
OTTA	22	1634	1702	1644	N23	W00	7812	1-	C	C	1644	*12	*13	19	H	
OTTA	22	1654	1703	1658	N23	W22	7809	1-	C	C	1658	*15	*16	19	H	
OTTA	22	1739	1817	1753	N24	W22	7809	1-	C	C	1753	*10	*10	19	H	
MCMA	22	1752	1800	1755	N25	W20	7809	1-	C	C	1755	*60	*60	19	H	
HALE	22	1916	1940	1929	N17	W90	7813	1-	C	C	1929	*50	*50	19	H	
HALE	22	1925	1933	1929	N18	W88	7813	1-	C	C	1929	*50	*50	19	H	
MCMA	22	1938	2008	D	N26	W20	7809	30 D	C	C	1944	*70	*10	20	S	
SACP	22	1940	1953	D	N25	W19	7809	13 D	C	C	1950	*72	*88	22	F	
HALE	22	1942	2009	1944	N25	W20	7809	27	C	P	1947	*20	*20	22	F	
HALE	22	1942	2016	1955	N17	W90	7813	1-	P	P	2003	*70	*70	22	F	
HUAN	22	1943	1957	1947	N27	W20	7809	1-	C	C	1947	1.00	1.00	22	F	
HUAN	22	1959	2009	1957	N19	W90	7813	1-	C	C	2002	*50	*50	22	F	
MCMA	22	2000	2007	2002	N18	W90	7813	1-	C	C	2002	*30	*30	22	F	
HALE	22	2054	2127	2111	N17	W90	7813	1-	C	C	2111	*60	*60	22	F	
HALE	22	2147	2200	2154	N18	W90	7813	1-	C	C	2154	*40	*40	22	F	
MCMA	22	2244	2249	D	N18	W90	7813	1-	P	P	2246	*20	*20	22	F	
HALE	22	2326	2331	2328	N17	W90	7813	1-	C	C	2328	*30	*30	22	F	
HALE	22	2337	0002	2344	N17	W90	7813	1-	C	C	2344	*40	*40	22	F	
HALE	23	0159	0207	0202	N17	W90	7813	1-	C	C	0202	*30	*30	23	H	
HALE	23	0223	0244	0226	N24	W24	7809	1-	C	C	0226	*20	*20	23	H	
HALE	23	0229	0328	0233	N24	W22	7809	1-	C	C	0233	*30	*30	23	H	
HALE	23	0314	0325	0322	N18	W90	7813	1-	C	C	0322	*10	*10	23	H	
HALE	23	0351	0355	0352	N17	W90	7813	1-	C	C	0352	*10	*10	23	H	
CATA	23	0625	E	0645	N21	W90	7813	1-	C	C	0636	*14	*80	23	H	
OTTA	23	1248	E	1353	D	N22	W10	7812	1-	C	C	1307	*18	*18	23	H
OTTA	23	1550	1617	1552	N22	W12	7812	1-	C	C	1552	*64	*68	23	H	
CAPS	23	1556	1606	1607	N27	E00	7812	1-	C	C	1600	*10	*10	23	H	
OTTA	23	1600	1623	1603	N21	W15	7812	1-	C	C	1603	*21	*21	23	H	
OTTA	23	1620	E	1625	1620	U	7812	1-	P	P	1714	*26	*26	23	H	
HALE	23	1707	1720	1714	N17	W90	7813	1-	P	P	1749	*20	*20	23	H	
HALE	23	1744	1804	1749	N21	W41	7809	1-	C	C	1809	*70	*80	23	H	
HALE	23	1806	1819	1809	N21	W41	7809	1-	C	C	1811	*20	*20	23	H	
HALE	23	1810	1812	1811	N16	W90	7813	1-	C	C	1908	*40	*40	23	H	
LOCK	23	1901	1920	1908	N21	W41	7809	1-	C	C	1908	*20	*20	23	H	
LOCK	23	1904	1915	1908	N22	W42	7809	1-	C	C	1908	*50	*50	23	H	
HALE	23	1927	1935	1930	N22	W42	7809	1-	C	C	1930	*40	*40	23	H	
HALE	23	2033	2037	2034	N15	W90	7813	1-	C	C	2034	*10	*10	23	H	
LOCK	23	2346	0012	2351	N24	W32	7809	1-	C	C	2351	*50	*50	23	H	
OTTA	24	1644	1656	1648	N30	E90	7827	1-	C	C	1648	*30	*30	24	E	
OTTA	24	1655	1653	1648	N25	W46	7809	1-	C	C	1648	*36	*47	24	E	
OTTA	24	1650	1737	1703	N26	W43	7809	1-	C	C	1703	1.08	1.35	24	E	

SOLAR FLARES

MAY 1965

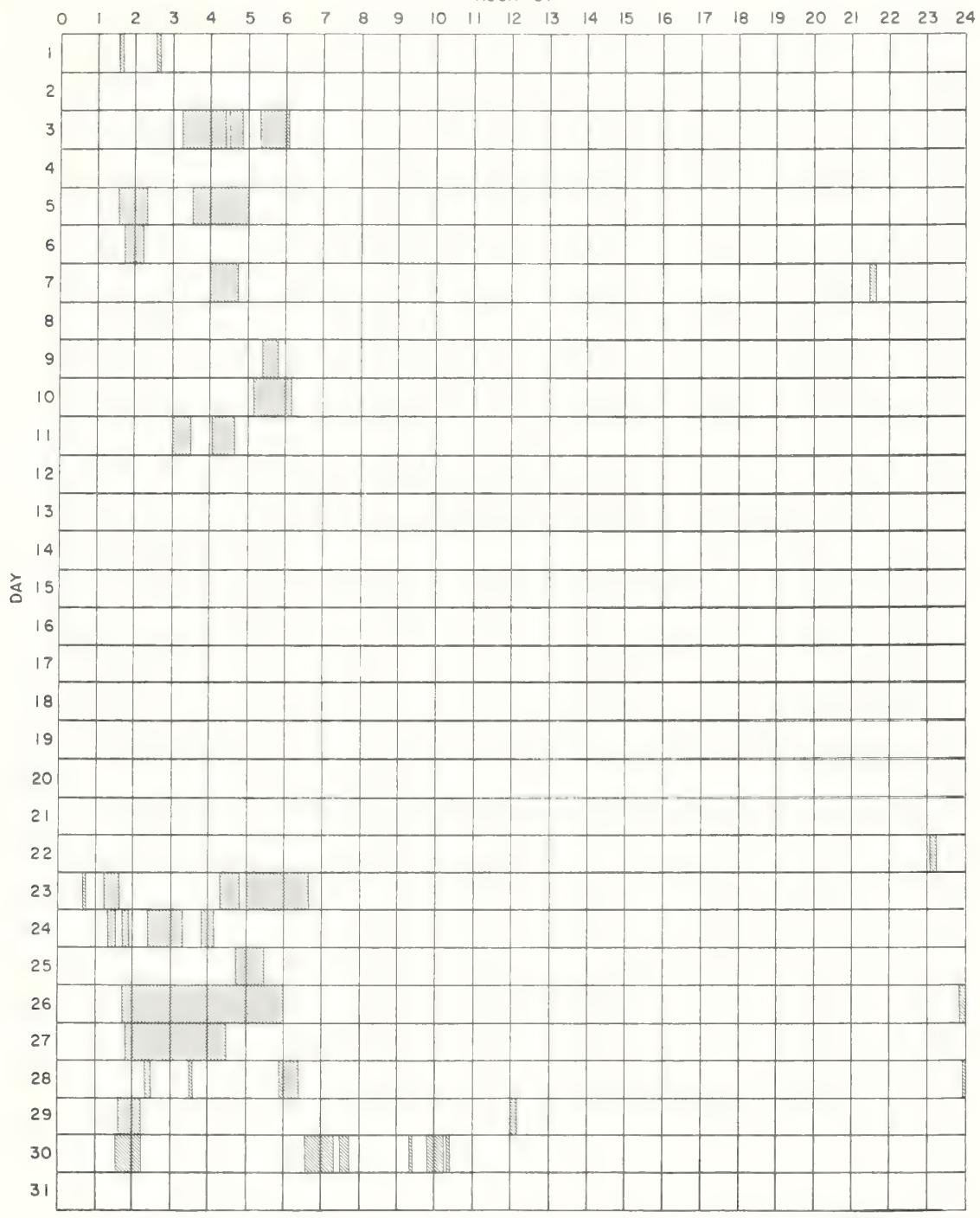
OBSERVATORY	DATE MAY 1965	OBSERVED UNIVERSAL TIME			LOCATION	IN FOR- TANCE	DURA- TION — MINUTES	MEAS- URES			MEASUREMENTS			REMARKS	
		START	END	MAX PHASE				APRICK	McMATH PLATE REGION	TIME	MEAS. AREA Sq Deg	CORR. AREA Sq Deg	MAX. WIDTH H <sub>o</sub>		
SACP	24	1700	1738	U	1706	N26	W43	7009	1-	1 P	1709	1.04	1.31	S	
MCMA	24	1702	1723	D	N27	W45	7809	1-	1-	3 C	1818	.10	.10	E	
HUAN	24	1704	E	1723	N27	W43	7809	1-	1-	3 C	1856	.30	.40	F	
HALE	24	1816	1822	1818	N20	W48	7809	1-	1-	3 C	1915	.30	.40	F	
HALE	24	1853	1905	1856	N20	W48	7809	1-	1-	3 C	1915	.30	.40	F	
HALE	24	1910	1921	1915	N23	W48	7809	1-	1-	3 C	2202	.80	.90	F	
HALE	24	2150	2219	2202	N24	W27	7812	1-	1-	2 P	2223	.40	.50	E	
MCMA	24	2220	E	2240	D	2223	N23	W28	7812	1-	1-	2 P	2223	.40	E
HALE	25	0338	0346	0339	N24	W28	7812	1-	1-	3 C	0339	.20	.20	F	
HALE	25	0419	0446	D	N27	W51	7809	1-	1-	2 P	0434	1.00	1.40	17	
SACP	25	1349	1359	1356	N19	W65	7809	1-	1-	3 C	1355	.15	.23		
OTTA	25	1352	1358	1355	N18	W77	7809	1-	1-	3 C	1634	.10	.20		
HALE	25	1631	1640	1634	N20	W49	7809	1-	1-	3 C	1648	.40	.60		
HALE	25	1645	1651	1648	N22	W60	7809	1-	1-	3 C	1651	.24	.44		
SACP	25	1647	1651	1651	N19	W67	7809	1-	1-	3 C	1752	.20	.40		
OTTA	25	1718	1751	1751	N19	W78	7809	1-	1-	3 C	1805	.20	.40		
HALE	25	1744	1755	1752	N18	W70	7809	1-	1-	3 C	1924	.20	.40		
HALE	25	1802	1816	1805	N18	W70	7809	1-	1-	3 C	2007	.20	.40		
LOCK	25	1921	1929	1924	N17	W49	7812	1-	1-	3 C	2008	.60	.20		
HALE	25	2005	2014	2007	N20	W72	7809	1-	1-	3 C	2212	.60	.19		
LOCK	25	2005	2015	2008	N19	W69	7809	1-	1-	2 C	2212	.40	.20		
SACP	25	2006	2010	2008	N20	W69	7809	1-	1-	2 C	2212	.40	.20		
LOCK	25	2209	2218	2212	N19	W69	7809	1-	1-	2 C	2245	.10	.20		
LOCK	25	2210	2216	2245	N19	W69	7809	1-	1-	2 C	2315	.20	.20		
LOCK	25	2240	2255	2245	N19	W69	7809	11	11	2 C	2315	.20	.20		
LOCK	25	2310	2322	2315	N32	E37	7824	1-	1-	2 C	0026	.60	.20		
LOCK	26	0021	0051	0026	N27	E35	7824	1-	1-	2 C	0855	.87	1.04	19	
SACP	26	0025	0036	0027	N28	W37	7812	1-	1-	2 C	1241	.30	.60		
ARCE	26	0855	E	0855	N19	W85	7809	1-	1-	2 C	1240	.20	.50	D	
OTTA	26	1235	1245	1241	N24	W72	7809	1-	1-	2 C	1241	.30	.60		
HUAN	26	1238	E	1244	D	N26	W70	7809	1-	1-	2 C	1246	.26	.50	
SACP	26	1239	1343	1244	N24	W68	7809	1-	1-	2 C	1346	.13	.35		
SACP	26	1343	1349	1346	N21	W79	7809	1-	1-	2 C	1346	.13	.35		
CAPS	28	0916	E	1038	D	N25	W90	7812	82	2	0940	1.00	.40		
LOCK	28	2034	2120	2046	N29	E28	7827	1-	1-	2 C	2046	.40	.40		
LOCK	29	1840	1910	1845	N38	E90	7838	1-	1-	2 C	1845	.30	1.50		
LOCK	29	1857													

INTERVALS OF NO FLARE PATROL OBSERVATIONS  
PROVISIONAL

IIIk

MAY 1965

HOUR-UT



ECOMMERCY - STANDARDS - BOULDER

Observatories included:

Arcetri	Haleakala	Kandilli	Manila	Ondrejov	Wendelstein
Bucharest	Herstmonceux	Kanzelhöhe	McMath-Hulbert	Ottawa	Wroclaw
Capri-S (Swedish)	Huancayo	Kodaikanal	Meudon	Sacramento Peak	
Catania	Istanbul	Lockheed	Mitaka	Tortosa	

## SOLAR FLARES

FEBRUARY 1965

OBSERVATORY	DATE FEB 1965	OBSERVED UNIVERSAL TIME			MAX PHASE	LOCATION	DURA- TION MINUTES	OBS COND.	MEASUREMENTS			MAX INT %	REMARKS	
		START	END	APPROX. LAT. MER. DIST.					TIME UT	MEAS AREA Sq. Deg	CORR. AREA Sq. Deg	MAX WIDTH H <sub>o</sub>		
CULG	01	0308	0314	0310	0504	NO6 E41 N36 W33	7661 7658	1-	C	0310 0504	1.00 .20	1.30 .32	GC	
CULG	01	0459	0508	0504	NO FLARE	PATROL		1-	C	0950	.49	.55		
ARCE	02	0920	E	1000	D	NO8 E22	7661	1-	C	.33	.32			
SACP	02	1510	1521	1517	NO7 E15	7661	1-	C	1616	.67	.67			
OTTA	02	1613	1622	1616	NO7 E13	7661	1-	C	1616	.50	.50			
MCMA	02	1614	1622	1616	NO8 E12	7661	1-	C	1616	.20	.20			
CLMX	02	1614	1623	1616	NO7 E13	7661	1-	C	.29	.28				
SACP	02	1620	E	1629	1620	NO7 E13	7661	1-	C	.75	.74			
SACP	02	1656	E	1719	1711	NO8 E13	7661	1-	C	.22	.22			
OTTA	02	1700	E	1715	1715	NO8 E13	7661	1-	C	.90	.00			
CLMX	02	1707	E	1715	1710	NO8 E13	7661	1-	C	1.10	.29			
SACP	02	1722	E	1753	1731	NO8 E13	7661	1-	C	.29	.28			
OTTA	02	1724	E	1754	1728	NO8 E13	7661	1-	C	1.28	.32			
CLMX	02	1725	E	1738	1729	NO8 E13	7661	1-	C	.60	.60			
SACP	02	1733	E	1800	U	1744	NO6 E15	7661	1-	C	.33	.32		
CLMX	02	1738	E	1802	1802	NO5 E16	7661	1-	C	1.43	.00			
OTTA	02	1741	E	1805	1744	NO5 E15	7661	1-	C	.90	.00			
SACP	02	1853	E	1917	1905	NO7 E11	7661	1-	C	.28	.28			
CLMX	02	1854	E	1917	1905	NO7 E12	7661	1-	C	1.08	.06			
SACP	02	1916	E	1939	1931	NO8 E12	7661	1-	C	1.10	.10			
CLMX	02	1919	E	1939	1929	NO8 E12	7661	1-	C	.60	.16			
LOCK	02	1919	E	1945	1930	N10 E10	7661	1-	C	1.929	.40			
MCMA	02	1924	E	1929	D	NO8 E10	7661	1-	C	1.930	.20			
CLMX	02	2043	E	2101	2053	NO7 E11	7661	1-	C	1.29	.20			
LOCK	02	2043	E	2109	2054	NO9 E09	7661	1-	C	2053	1.00			
HALE	02	2048	E	2050	2052	NO6 E08	7661	1-	C	.60	.60			
SACP	02	2050	E	2057	2052	NO7 E10	7661	1-	C	1.04	1.02			
LOCK	02	2131	E	2201	2140	NO8 E09	7661	1-	C	.50	.50			
CULG	02	2200	E	2209	2203	NO8 E10	7661	1-	C	2140	.42			
CULG	02	2206	E	2240	2211	NO9 E12	7661	1-	C	2203	.42			
CULG	02	2247	E	2251	2249	NO8 E12	7661	1-	C	2211	1.47			
CULG	02	2305	E	2318	D	2313	NO8 E09	7661	1-	C	2249	.63		
LOCK	02	2306	E	2326	2313	NO6 E08	7661	1-	C	2313	2.00			
LOCK	02	2307	E	2326	2314	NO6 E08	7661	1-	C	2313	.50			
HALE	02	2311	E	2318	2312	NO7 E09	7661	7	E	2314	.70			
MINT	02	2343	E	2356	D	2345	NO9 E11	7661	1-	C	2345	.63		
CULG	03	0022	E	0041	0030	NO7 E09	7661	1-	C	0030	1.05			
LOCK	03	0023	E	0034	0029	NO8 E08	7661	1-	C	0029	.70			
LOCK	03	0027	E	0031	0029	NO7 E08	7661	1-	C	.70	.70			
LOCK	03	0041	E	0053	0046	NO9 E09	7661	1-	C	0046	.50			
CULG	03	0043	E	0052	D	NO9 E10	7661	1-	C	1.20	1.26			
CULG	03	0058	E	0119	0105	N10 E10	7661	1-	C	0105	.63			
CULG	03	0115	E	0152	0121	NO8 E08	7661	1-	C	0121	.84			
CULG	03	0159	E	0209	0204	N10 E10	7661	1-	C	0204	.21			
CULG	03	0200	E	0213	0204	NO7 E08	7661	1-	C	0204	.80			
CULG	03	0204	E	0220	0211	NO9 E08	7661	1-	C	0211	.60			
CULG	03	0223	E	0237	0226	NO9 E10	7661	1-	C	0226	2.00			
CULG	03	0234	E	0254	0242	NO8 E08	7661	14	C	0242	1.47			
CULG	03	0306	E	0321	0310	NO7 E11	7661	1-	C	0310	.42			

# SOLAR FLARES

FEBRUARY 1965

OBSERVATORY	DATE FEB 1965	OBSERVED UNIVERSAL TIME			APPROX. LAT. MER. DIST.	LOCATION M-PLATE REGION	DURA- TION MINUTES	IM- POR- TANCE	OBS. COND.	TIME U.T.	MEASUREMENTS			MAX WIDTH Ha	MAX INT. %	REMARKS	
		START	END	MAX PHASE							MEAS AREA Sq. Deg.	CORR AREA Sq. Deg.	MAX WIDTH Ha				
CULG	03	0314	0324	0317	N08 E08	7661	1-	C	0317	1•00	1•05						H
CULG	03	0338	0352	0341	N08 E08	7661	1-	C	0341	•80	•84						
MCMA	03	0355	0415	NO FLARE	PATROL												LS
03	1715	1732	1720	N08 E03	7661	1-	C	1720	•30	•30							
ARCE	04	0855	E	0925	D	N08 W05	7661	1-	2	0905	1•70	1•76					
SACP	05	1613	1629	1621	N06 W24	7661	1-	C	0942	•99	1•01						
SACP	05	1750	2000	U	N07 W25	7661	130 U	2	C	1•51	1•93						
MCMA	05	1750	2006	D	N08 W25	7661	136 D	2+	C	1810	7•50	8•50					FS
CLMX	05	1750	2024	1810	N08 W26	7661	154	2	C	1810	8•20	8•20					
CULG	06	0127	0135	0131	N07 E49	7668	1-	C	0131	•40	•64						G
ARCE	06	0942	E	1000	D	N10 W33	7661	1-	4	0942	•56	•70					
CULG	06	1720	1930	NO FLARE	PATROL												
ARCE	06	1950	2100	NO FLARE	PATROL												
CULG	06	2150	2210	NO FLARE	PATROL												
CULG	07	0320	0330	0324	N12 W46	7661	1-	C	0324	•20	•30						
MITK	07	0330	0347	0346	N11 W42	7661	1-	C	0339	•60	•80						
CULG	07	0332	0356	0339	N11 W42	7661	1-	C	0426	•20	•30						
CULG	07	0422	0433	0426	N05 W48	7661	5 D	1	1	1•157							C
CAPS	07	1155	E	1200	D	NO FLARE	PATROL										
CULG	07	1220	1245	1226	N09 W51	7661	29	1	C	1826	3•60	4•50					FL
LOCK	07	1819	1838	D	N09 W53	7661	16 D	1	C	1826	1•64	2•74					EFFL
HUAN	07	1822	1827	1826	N18 26												
HUAN	07	1826	1826	1826	N16 W53	7661	1-	4	2131	•60	•80						
HALE	07	2128	2144	2131	N22 W52	7660	1-	C	1159	1•00	1•50						D
MITK	07	2333	2346	2338	N13 W49	7665	1-	C	1159	1•00	1•50						
KIEV	08	1151	1210	1159	N30 E90	7667	1-	C	1845	•30	1•50						
LOCK	08	1545	1600	1845	N31 E90	7667	1-	C	1846	2038	•50	•80					K
MCMA	08	1833	2000	1846	N31 E90	7667	1-	C	2038	•50	•80						L
LOCK	08	2029	2117	2038	N05 W65	7661											
CULG	09	0120	0200	NO FLARE	PATROL												
CULG	09	0640	0800	NO FLARE	PATROL												
CULG	09	1600	1605	NO FLARE	PATROL												
CULG	09	1905	2105	NO FLARE	PATROL												
CULG	09	2115	2235	2327	N25 E38	7674	32	2	C	2305	3•60	5•40					FL
ARCE	10	0925	E	1013	D	N20 W90	7660	48 D	1	1	1002	•72	4•09				H
CAPE	10	0950	1022	1022	N20 W90	7660	32	1	C	1004	•90						
CAPE	10	1020	1045	D	N18 W90	7660	25 D	1-	C	1022	1•25	•50					
CAPE	10	1121	1128	1128	N21 W90	7660											
CAPE	10	1605	1650	NO FLARE	PATROL												

## SOLAR FLARES

FEBRUARY 1965

OBSERVATORY	DATE FEB 1965	OBSERVED UNIVERSAL TIME		LOCATION	IM- POR- TANCE	DURA- TION MINUTES	MEAS- PHASE REGION	OBS CORD	TIME UT	MEASUREMENTS			MAX INT %	REMARKS
		START	END							MEAS AREA Sq. Deg.	CORR AREA Sq. Deg.	MAX WIDTH Ho		
CULG	11	0524	0529 D	N29 E51	7677	1-	P	0526		*80				
LOCK	11	1913	1937	N29 E41	7677	1-	C	1924		*30				10
LOCK	11	2110	2127	N29 E41	7677	1-	C	2116		*30				10
CULG	12	0555	0611	U602	N22 E39	7677	1-	C	0602	*60	*84			C
CULG	12	0557	0613	U601	N26 E43	7677	1-	C	0601	*80	1.36			
OTTA	14	1606	1610	NO FLARE	PATROL									
CULG	14	2200	2217	1610	S41 W19	7687	1-	C	1610	*15				H
OTTA	14	2205	2225	1610	N32 E06	7677	1-	C	2205	*20	*26			
KAND	15	0735	0745	NO FLARE	PATROL									
CULG	15	1333	1338	1338	S22 W85		1-	C						
CULG	16	0453	0502	0455	N25 E56		1-	C	0455	*40				G
CULG	16	0540	0548	0544	N28 W13	7677	1-	C	0544	*60				GH
LOCK	16	1700	1716	1707	N32 E01	7677	1-	C	1707	*10				H
LOCK	16	2006	2019	2010	S04 E45		1-	C	2010	*20				10
LOCK	16	2244	2257	2249	S01 E27	7693	1-	C	2249	*10				10
OTTA	17	1200	1205	NO FLARE	PATROL									
CULG	17	1255	1300	NO FLARE	PATROL									
CULG	17	1844	1855	1855	N24 W63	7674	1-	C	1845	*11				
CULG	17	2316	2316	2316	N23 W60	7674	1-	C	2323	*40				10
SACP	17	2317	2317	2316	N23 W62	7674	1-	C	2323	*40				G
CULG	17	2319	2332	2328	N25 W64	7674	1-	C	2358	*46				16
CULG	17	2340	2400	2358	N13 E22		1-	P	2358	*40				G
CULG	18	0137	0200	0148	N28 E22		1-	C	0148	*20				G
KAND	18	1016	1025	1022	N31 E90	7696	1-	C						
KAND	18	1026	1032	1028	N26 E90	7696	1-	C						
KAND	18	1116	E	1121	N02 W50		1-	C	1540	*60				
CLMX	18	1535	1547	1540	N04 E67	7694	1-	C						17
SACP	18	1535	1547	1540	N05 E66	7694	1-	C						
LOCK	18	1759	1837	1837	S31 W13	7695	1-	C	1815	*20				10
LOCK	18	2044	2102	2054	N43 W30	7677	1-	C	2054	*30				10
CULG	18	2142	2201	2150	N21 W34	7677	1-	C	2150	*40				CGL
LOCK	18	2147	2205	2152	N20 W32		1-	C	2152	*40				H
CULG	18	2220	2229	2223	N00 E58	7694	1-	C	2223	1.00				CG
SACP	18	2232	2232	2224	N02 E58	7694	1-	C						17
MCMA	19	1635	1650	1638	S23 W13	7695	1-	C	1638	*20				DH
CULG	20	0210	0215	NO FLARE	PATROL									CGH
LOCK	20	2218	2236	2226	N32 E15		1-	C	0226	*40				10
SACP	20	2238	2238	2225	N30 E13		1-	C	2225	*20				18
CULG	20	2256	2307	2259	N27 E64	7697	1-	C						6
LOCK	20	2256	2309	2301	N26 E64	7697	1-	C	2301	*60				10
KAND	23	0653	E	0808	0713	S05 E90	7704	75 D	2					

# SOLAR FLARES

FEBRUARY 1965

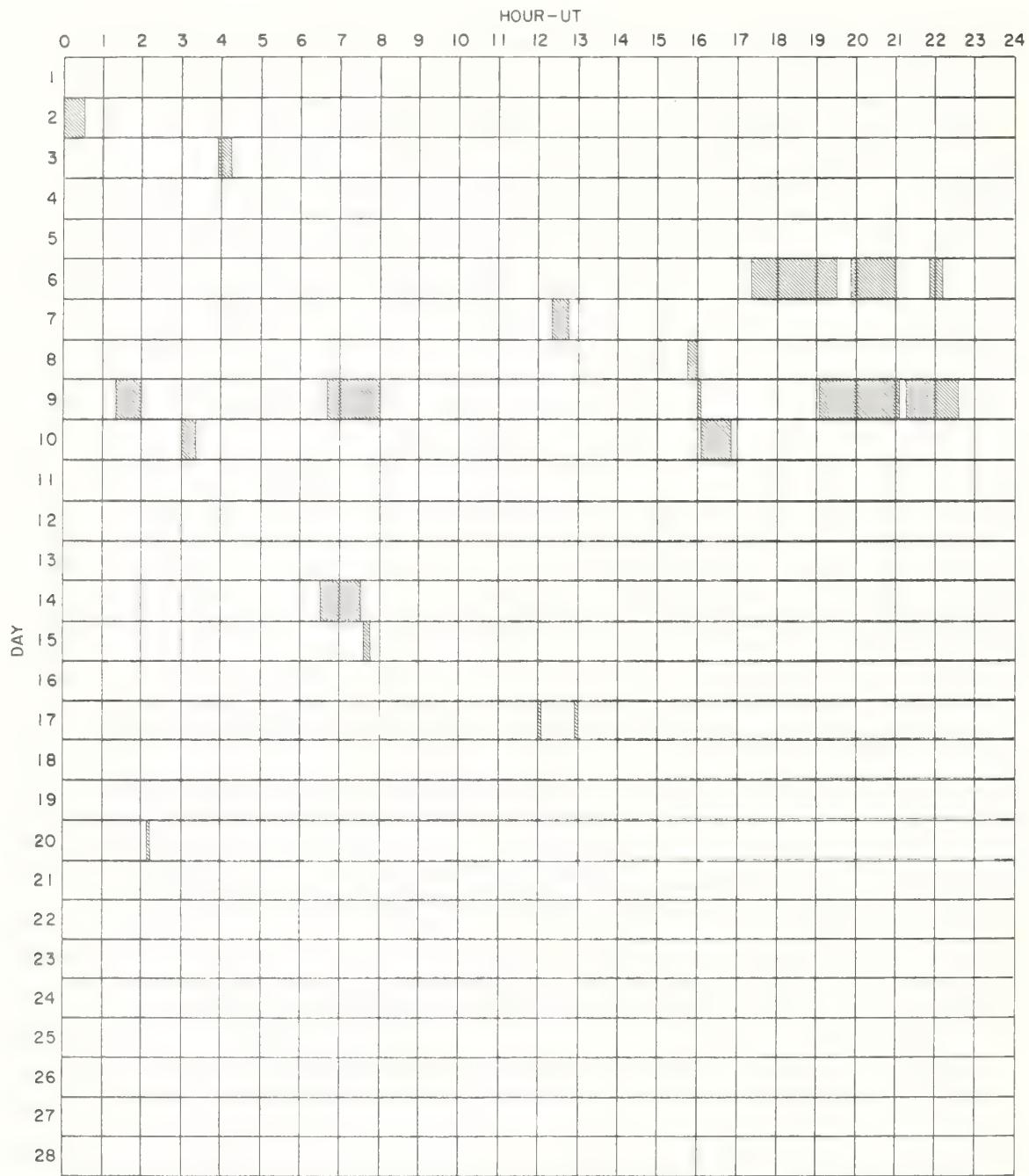
OBSERVATORY	DATE FEB 1965	OBSERVED UNIVERSAL TIME		LOCATION		IM- POR- TANCE MINUTES	OBS. COND.	MEASUREMENTS			REMARKS
		START	END	APPROX. LAT.	MER. DIST.			MEAS. AREA Sq Deg	CORR. AREA Sq Deg	MAX WIDTH H <sub>o</sub>	
LOCK	23	2010	2030	20117	N32 W90	1-	C	2017	•30	1•50	20
SIBE	24	0420 E	0429	0423	S04 E79	7704	9 E	C	0423	•66	3•40
LOCK	24	2026	2041	2033	S03 E61	7704	1-	C	2033	•30	•50
SACP	26	2123	2142	2130	N16 E54	7707	1-	C	12	•18	17
HALE	26	2336	2355	2346	N05 E35	1-	3	2346	•20	•20	H
CULG	27	0419	0436	0429	S05 E32	7704	1-	C	0429	•60	•69
CULG	27	0502	0518	0511	S06 E32	7704	1-	C	0511	•20	•23
CULG	27	0551	0607	0567	S16 E35	7709	1-	C	0557	•80	1•00
MITK	27	0553	0604	0556	S15 E35	7709	1-	C	0846	•16	155 G
CATA	27	0845	0915 D	0846	N28 E74	7710	1-	C	0846	•42	
15TA	27	0855 E	0924 D	0924	N35 E21	9 D	1	1	0930	1•82	2•79
N1ZH	27	0925 E	0935 D	0930	S15 E44	7709	10 E	1	0936	1•60	1•30
HTPR	27	0932 E	0942 D	0936	N23 E45	7707	20	1	0936	2•50	
KANZ	27	0942 E	0946 D	0946	N16 E49	7707	4 D	1	1		E
CAPS	27	0942 E	1020 D	1020	N22 E42	7707	38 D	1	0942	2•40	3•50
ARCE	27	1015 E	1020 D	1020	N24 E47	7707	1-	1	1015	•65	1•06
ARCE	27	1015 E	1020 D	1020	N36 E72	7710	1-	2	1015	•26	•80
ARCE	27	1015 E	1020 D	1020	S01 E30	7704	1-	2	1015	•20	•23
MCMC	27	1319 E	1417 D	1417	N32 E62	7710	1-	2	1350	•40	S
CULG	27	2234 E	2239 D	2239	S04 E21	7704	1-	C	2239	•20	•21
HUAN	27	2238 E	2238 D	2238	S03 E22	7704	1-	P	2238	•10	D
CULG	28	0425	0549	0432	N23 E37	7707	1-	C	0432	3•00	FG
LOCK	28	2010	2025	2015	N30 E44	7710	1-	C	2015	•40	10
LOCK	28	2042	2104	2047	N21 E22	7707	1-	C	2047	•50	20
MCMC	28	2057	2057	2048	N23 E29	7707	1-	3 C	2048	•40	•50

COMMERCE - STANDARDS - BOULDER

These flare reports are addenda to the February 1965 flares published in CRPL-F 247 Part B for March 1965.

## INTERVALS OF NO FLARE PATROL OBSERVATIONS

FEBRUARY 1965



COMMERCE - STANDARDS - BOULDER

## Observatories Included:

Abastumani	Catania	Ikomasan	Locarno	Ondrejov	Voroshilov
Arcetri	Climax	Istanbul	Lockheed	Ottawa	Wroclaw
Athenes	Culgoora	Izmiran	Lvov	Sacramento Peak	Zurich
Bucharest	Haleakala	Kandilli	Manila	Siberie	
Capetown	Haute-Provence	Kanze lhöhe	McMath-Hulbert	Tachkent	
Capri-F (German)	Herstmonceux	Kiev-Ko	Mitaka	Tortosa	
Capri-S (Swedish)	Huancayo	Kodaikanal	Nizamiah	Uccle	

## JONOSPHERIC EFFECTS OF SOLAR FLARES

IIIq

APRIL 1965

APR 1965	UNIVERSAL TIME			TYPE SWF IMP	IMPORTANCE						WIDE SPREAD INDEX	STATIONS	KNOWN FLARE	
	START	END	MAX		ABS	SCNA	SEA	SPA	SES	SFD	BUR			
02	1958	2001									1	5	HA BO	
02	2103	2106									1-	5	BO HA RO	
02	2203	2209									1	5	BO HA	
02	2250	2253									1-	5	BO HA	
02	2305	2307									1-	5	HA BO	
05	2035	2038									1	5	HA BO	
06	1930	1933									1	5	BO HA	
09	0150	0152									1-	5	MA HA	
11	1450	1540	1508	S 2							5	PU DA HU JU MC		
11	1455	1535	1507								5	A-1		
11	1456	1522	1509								5	PU		
-11	1458	1608	1552		7	1			1		5	PU A-2 A-5		
15	2353	0010	2358	G 1-							3	MA	1453	
15	2353	0018	2358						18		3	MA		
17	2136	2143									1	5	RO HA	2351
21	1418	1421									1-	5	BO RO	2132
21	1430	1433									1-	5	RO BO	
21	1451	1454									1-	5	BO RO	
21	1457	1459									1-	5	BO RO	
21	1623	1627									1	5	RO BO	
21	2129	2134									1	5	BO HA	

COMMERCE - STANDARDS - BOULDER

## RIOMETER EVENTS

APRIL 1965

FROBISHER BAY

30 Mc/s

APR. 1965	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS	APR. 1965	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS
9	0320	0400	0329	3	1	20	0910	1608	1107	7	2
13	0142	0326	0153	22	4	25	1132	1325	1139	16	4
14	2358	0008	2400	4	1	26	0950	1510	1035	16	2
17	1300	1920	1618	14	2	27	0920	1924	1425	12	1
18	0332	1100	0704	9	5	28	0925	1312	1019	19	5
19	0216	0428	0224	6	2	30	0940	*	1000	22	1
19	1004	0119	2326	32	2						

COMMERCE - STANDARDS - BOULDER

\* Uncertain due to equipment failure

**SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES**

IVa

MAY 1965

ARO-OTTAWA  
DRAO-PENTICTON

2800 Mc/s  
2700 Mc/s

MAY 1965	U R A N E	DESCRIPTIVE TYPE	START UT	DURATION HRS MIN	MEAN FLUX	MAXIMUM		REMARKS
						TIME	FLUX	
2	3	Simple 3A	0045	45	1.0	Indet.	2.0	
	1	Simple 1F	0048	01	4.5	0048.5	7.0	
2	3	Simple 3A	1205	1 37	1.3	1230	2.5	
	1	Simple 1	1210	04	0.5	1212	1.0	
8	3	Simple 3	1634	2 31	0.5	1810	1.0	
13	3	Simple 3	2312	18	0.5	2330	1.0	
15	1	Simple 1	1354	03.5	0.5	1355	1.0	
15	3	Simple 3	1440	1 25	0.7	1515	1.5	
15	1	Simple 1	1921	05	1.5	1924	3.0	
	4	Post B.I.	1926	30	0.7		1.5	
16	3	Simple 3	1440	1 55	0.8	Indet.	1.5	
16	3	Simple 3F	1905	2 07	1.0	1945	2.0	
17	3	Simple 3	1425	35	1.0	1440	1.8	
17	3	Simple 3	1505	12	0.6	1508	1.2	
17	1	Simple 1	1836	02	0.3	1837	0.6	
17	1	Simple 1	2039	03	1.5	2040	3.0	
17	3	Simple 3	2214	26	0.6	2222	1.2	
17	3	Simple 3	2350	>1 50	-	0050	2.6	
18	3	Simple 3	1551	2 14	0.5	1630	1.0	
18	3	Simple 3A	1842	55	0.8	1906	1.6	
	1	Simple 1	1851	01.5	0.5	1851.5	1.0	
	1	Simple 1	1858	03	0.5	1858.5	1.0	
	1	Simple 1	1903	03	2.0	1904	4.0	
18	3	Simple 3F	1957	2 33	0.7	2119	1.4	
18	3	Simple 3	2325	2 15	0.7	0030	1.4	
19	3	Simple 3A	1405	1 35	1.5	1428	3.0	
1	Simple 1	1424		02	2.0	1425	4.0	
19	1	Simple 1	1600	2 00	0.7	1600.5	1.3	
19	3	Simple 3F	1815	1 30	2.5	1824	5.0	
19	3	Simple 3	2046	1 28	1.2	2114	2.0	
19	3	Simple 3A	2356	1 22	1.3	0008	2.2	
20	1	Simple 1	0002	02	1.1	0003	2.2	
20	1	Simple 1	0137	04.5	1.0	0138.3	2.0	
20	3	Simple 3	b1425	>1 17	1.2	1450	2.4	
20	3	Simple 3	1608	2 10	1.3	1710	2.0	
20	3	Simple 3A	2026	2 36	1.0	2045	2.0	
	1	Simple 1	2140	01	0.5	2140.5	1.0	
20	3	Simple 3A	2320.8	>2 20	-	2343	7.5	
6	Complex		2320.8	03	7.0	2321	18.0	
1	Simple 1	2339.5		02.5	1.4	2341	2.0	
6	Complex		2344	02.5	2.5	2345	4.0	
21	3	Simple 3	1131	11	1.1	1134	2.2	
21	3	Simple 3	1840	40	0.3	1855	0.6	
21	3	Simple 3	2002	28	0.5	2015	1.0	
21	3	Simple 3	2330	2 05	1.2	0002	2.4	
22	3	Simple 3	1823	33	0.3	1829	0.6	
22	3	Simple 3A	1940	1 35	2.7	1950	5.4	
	1	Simple 1	1942	04	1.5	1943	3.0	
	1	Simple 1	2026	03	3.2	1927.5	6.4	
23	3	Simple 3	1550	35	0.7	1552	1.4	
23	3	Simple 3F	2340	1 26	1.3	2353	2.6	
24	3	Simple 3F	1649	1 11	1.6	1705	3.2	
24	3	Simple 3	1818	1 10	0.3	Indet.	0.6	
24	3	Simple 3	2230	1 00	0.4	2300	0.8	
25	2	Simple 2F	2242	02	4.0	2202.8	10.0	

**SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES**

MAY 1965

NBS BOULDER

108 Mcs

May 1965	TYPE	START UT	TIME OF MAXIMUM UT	DURATION MINUTES	INTENSITY
12	3	1311.7	1312.1	1.6	3
25	8	2241	2241.1	4	3

COMMERCE - STANDARDS - BOULDER

**NOMINAL TIMES OF OBSERVATION**

MAY 1965

NBS BOULDER

108 Mcs

May 1965	HOURS OF OBSERVATION U.T.	HOURS OF INTERFERENCE U.T.	May 1965	HOURS OF OBSERVATION U.T.	HOURS OF INTERFERENCE U.T.
1	1205-0135		18	1147-0150	2152-2159;
2	1204-0136	1439-2200; 2307-0002	19	1147-2057; 2138-0151	2300-0151 1858-2057; 2138-2257; 2305-0151
3	1203-1358; 1417-0137	1443-1937; 2304-0137			
4	1202-0138	1202-1825; 2255-0138	20	1146-1619; 1726-0152	2205-0152
5	1201-0139	1201-1929; 2302-0139	21	1145-0153	2300-0153
6	1159-0140	1330-1552; 2300-0140	22	1144-0154	2007-0154
			23	1143-0154	1500-0154
			24	1143-0155	1428-2205;
7	1158-0141	2315-0141			2245-0155
8	1157-0142	2228-0142	25	1142-1753;	1630-1753;
9	1156-0143	1745-0143		1900-0156	1900-0007
10	1155-0144	1228-1823; 2300-0144	26	1141-0157	2019-2250; 2340-0157
11	1154-0145	1200-1500; 2137-0145	27	1141-0158	
12	1153-0146	2300-0146	28	1140-0158	
13	1152-0146	1844-0147	29	1140-0158	
14	1151-0147	2300-0147	30	1139-1636; 1800-0159	
15	1150-0148	2300-0148			
16	1149-0149		31	1139-1552;	1722-0159
17	1148-0149	2253-0149			

COMMERCE - STANDARDS - BOULDER

NOTE: Equipment operated erratically May 30 and 31. Most of the interference due to atmospherics.

**SOLAR RADIO EMISSION  
SPECTRAL OBSERVATIONS**

IVc

MAY 1965

**High Altitude Observatory  
Boulder**

**7.6-41 Mc/s**

Date May 1965	Bursts			Frequency Range (Mc/s)	Date May 1965	Bursts			Frequency Range (Mc/s)
	Type	Time (U.T.)	Intensity			Type	Time (U.T.)	Intensity	
1 May	III	1427-1431:30	2	8-41	18 May	III	1554:45-1555	1-	29-34
	IV	1427-1448	1-	21-41		III	1601:15-1601:45	1-	20-41
	III	1622-1623:15	1+	20-41		III	1612:45-1613	1	19-41
	III	1643-1643:30	1-	8-41		III	1613:15-1613:45	1	19-41
3	III	1623:15-1623:45	2	28-41		III	1630:45-1631	1	26-38
6	no observ.	2112-2254				III	1635-1635:30	1	19-38
7	no observ.	1300-1544				continuum	1704-1750	1-	21-41
	III	1353-1353:15	1-	27-41		III	1756:15-1756:45	1	22-31
	III	1403:45-1404:45	2	14-41		III	1806:30-1807	1-	22-41
	III	1553:30-1553:45	1-	18-41		III	1830-1830:15	1	21-30
	III	1719:30-1720	1-	22-41		III	1840-1840:30	1-	26-41
	III	1802:30-1802:45	1	21-41		III	1846-1846:15	1-	23-41
	III	1818:15-1818:30	1	11-41		III	1921-1921:15	1-	23-34
	III	1824:45-1825:15	1	24-41		III	1934-1934:15	1-	24-32
10	no observ.	2010-2258				III	1949-1949:15	1-	22-41
12	no observ.	1300-1349				III	2005:30-2005:45	1-	19-37
15	III	2025-2025:15	1-	22-41		III	2006:15-2006:45	1-	17-40
17	III	0103-0103:30	1	22-38		III	2019-2019:15	1-	26-33
	III	1154:45-1155	1-	17-41		III	2053:15-2053:40	1-	24-32
	III	1600-1600:15	1	20-41		III	2108:15-2108:30	1-	24-41
	III	1618:45-1619	1	23-37		III	2119:15-2119:45	2	19-41
	III	1638-1638:15	1	24-30		III	2131:45-2132:15	1+	21-41
	III	1800:45-1801	1-	28-35		III	2134-2134:15	1	21-41
	III	1809:45-1810	1	23-41		III	2210:30-2211	1+	18-41
	III	1815:30-1816:45	2	9-41		III	2258:15-2258:30	1	22-37
	III	1924:15-1924:30	1-	18-27		III	2336:15-2336:45	3	12-41
	III	2002-2002:15	1-	22-35		III	2336:45-2337:30	2	12-41
	III	203-2003:15	1	24-41		III	2337:30-2337:45	1	12-41
	III	2145:30-2145:45	1	19-39		III	2378-2378:15	1	20-41
	III	2237-2237:15	1-	21-35		III	2355:45-2356	1-	26-35
18	III	2335-2335:15	1	21-35		III	2356:45-2357	1-	26-35
	III	2354-2354:15	1-	27-38	19	III	0013:30-0013:45	1+	24-41
	III	0008:45-0009:45	3	12-41		III	1129-1129:15	1	16-21
	III	0010:15-0010:45	1+	20-41		III	1130-1130:30	1	16-22
	III	0051-0052:45	2	16-41		III	1131:15-1131:45	1	16-22
	III	0056:45-0057	1-	22-41		III	1140:15-1143:15	2	12-41
	III	1157:15-1157:45	1+	13-35		III	1143:30-1143:45	1+	19-41
	III	1224:15-1224:30	1	17-41		III	1227:30-1227:45	1-	24-33
	III	1224:30-1224:45	1	17-41		III	1320:15-1320:45	1+	20-41
	III	1225-1225:15	1	25-41		III	1323-1323:15	1-	22-38
	III	1225:15-1225:30	1	25-41		III	1402-1402:15	1	25-41
	III	1226:30-1227	1-	25-41		III	1404:45-1405	1-	23-30
	III	1316:15-1316:30	1-	22-41		III	1406-1406:45	2	16-41
	III	1344:15-1344:15	1	22-41		III	1407:15-1410:15	2	16-41
	III	1402:15-1402:30	1	25-41		III	1411:15-1411:30	2	17-41
	III	1414:45-1415:15	1+	10-41		III	1457-1457:15	1-	25-32
	III	1421-1421:15	1	24-39		III	1502:15-1502:30	1-	21-34
	III	1441-1441:15	1	23-38		III	1515:45-1516:15	2	16-41
	III	1516-1516:15	1	21-41		III	1532-1532:30	2	16-41
	III	1519:15-1519:30	1	27-31		III	1537:30-1539:15	3	8-41

SOLAR RADIO EMISSION  
SPECTRAL OBSERVATIONS

MAY 1965

High Altitude Observatory  
Boulder

7.6-41 Mc/s

Date May 1965	Bursts			Frequency Range (Mc/s)	Date May 1965	Bursts			Frequency Range (Mc/s)
	Type	Time (U.T.)	Inten- sity			Type	Time (U.T.)	Inten- sity	
19 May	III	1542:30-1543	1+	16-41	21 May	III	0027:30-0027:45	1-	29-41
	III	1544:45-1545	1+	20-31		III	0041-0041:15	1-	20-39
	III	1550-1550:15	1	21-41		III	1640:45-1649	1-	20-40
	III	1603:30-1603:45	1	29-39		III	1703:45-1704:15	1-	20-39
	III	1604:45-1605	1	25-41		III	1851-1851:15	1-	20-41
	III	1612-1614:30	1+	16-41		III	1853:45-1854	1-	20-41
	III	1635:30-1636:30	1-	22-35		III	1954:45-1955	1-	20-39
	III	1728:45-1729	1	24-41		III	2030-2030:15	1-	20-41
	III	1831:45-1832	1-	22-38		III	2045:30-2049:45	1	20-36
	III	1915:30-1915:45	1-	29-41		III	2053:45-2054	1-	20-39
20	III	1918:15-1918:45	1	16-41	22	continuum	2107-2527	1-	23-41
	III	1920:30-1921	1-	17-41		continuum	2123-1835	1-	20-41
	III	1926-1926:45	2	14-41		III	1940:45-1950	2	16-34
	III	2008:45-2010:30	2	8-41		III	1602:45-1603:15	1	16-36
	III	2015:30-2015:45	1	24-35		III	1847-1848:15	2	21-41
	III	2050:15-2050:45	1	21-41		continuum	1840-a2000	1-	20-41
	III	2101:15-2101:30	1-	23-34		III	2210:45-2211:15	1	23-41
	III	2218-2218:30	1-	16-41		III	1248:30-1249	1-	34-41
	III	2219-2219:30	1+	16-41		III	1250:15-1250:45	1-	34-41
	III	2239:45-2240	1-	23-30		III	1252:15-1252:30	1-	26-41
21	III	2304:15-2305:30	3	13-41	23	III	1308:30-1309	1	27-41
	III	2335-2335:15	1	27-41		III	1309:15-1309:30	1-	31-41
	III	2338:45-2338:15	2	13-41		III	1617:30-1619	2	28-41
	III	2341:45-2342	1-	35-41		III	1619-1619:30	1	26-41
	III	0002:30-0005	3	11-41		III	1654:15-1654:45	1-	22-41
	III	0005:15-0005:30	1	27-41		III	1717-1717:30	1	24-41
	III	0007:45-0012:15	1	23-41		III	1718:30-1719:45	2	25-41
	III	0014-0014:15	1-	34-41		III	1726:15-1727:30	1+	23-41
	III	0045-0045:30	1+	19-41		III	1727:15-1727:30	1-	26-41
	III	0046-0047:15	2	17-41		III	1729-1729:30	1	28-41
22	III	0103-0103:15	1	29-41	24	III	1732-1732:15	1	28-41
	III	0116:15-0116:30	1-	27-38		III	1733:15-1733:30	1-	32-41
	III	1230:15-1236:30	1-	24-41		III	1743:30-1743:45	1-	32-41
	III	1305:45-1306	1	21-32		III	1747-1747:15	1-	32-41
	III	1317:15-1317:30	1-	31-38		III	1747:30-1749	2	34-41
	III	1321:30-1321:45	1	29-38		III	1749:15-1749:30	2	26-41
	III	1329:30-1329:45	1-	26-41		III	1752:30-1753:15	1	28-41
	III	1412:30-1413	1-	28-41		III	1806:45-1809:45	3	16-41
	III	1421:15-1421:30	1	24-41		continuum	1806:45-1813:30	1-	31-41
	III	1631:15-1632	2	8-41		III	1927-1927:45	1	16-41
23	III	1632:45-1633:15	1+	20-39	24	III	1928-1928:45	1	16-41
	III	1639:45-1640	1	27-37		III	1929-1929:15	1-	24-41
	III	1640:30-1641	1	19-41		III	1955:45-1956:30	1+	23-41
	III	1744-1744:15	1-	25-32		III	2021:30-2022	1-	27-32
	III	1752:15-1822:30	1	20-41		III	2026:30-2027	1-	26-33
	III	1857:30-1857:45	1	20-41		III	2034:30-2035	2	15-41
	III	2054:45-2055	1-	29-41		III	2044:45-2045:15	1	26-34
	III	0014:15-0014:30	1	23-41		III	2047:45-2048:15	1	25-37
	III	0015-0016:30	2	12-41		III	1623:15-1623:30	1-	24-38
	III	0110:30-0110:45	1-	25-41		III	1751:45-1752	1-	23-37

**SOLAR RADIO EMISSION  
SPECTRAL OBSERVATIONS**

IVe

MAY 1965

**High Altitude Observatory  
Boulder**

**7.6-41 Mc/s**

Date May 1965	Bursts			Frequency Range (Mc/s)	Date May 1965	Bursts			Frequency Range (Mc/s)
	Type	Time (U.T.)	Inten- sity			Type	Time (U.T.)	Inten- sity	
24 May	III	1953:45-1954:15	1-	20-39	25 May	III	1827:15-1828	1+	19-41
	III	1954:30-1955	1-	22-39		III	1956:45-1957:45	1+	16-41
	III	2057:15-2057:45	1-	23-41		III	1957:45-1958:15	1	19-41
	III	2058:30-2059	1	16-41		III	2005:15-2005:30	1+	19-41
	III	2059-2059:30	1	16-41		III	2006-2006:30	1+	8-41
	III	1130:15-1131	1+	16-41		III	2006:30-2011:15	3	8-41
	III	1131-1132:15	1+	16-41		III	2116:30-2117:15	1	13-41
	III	1132:15-1133:45	?	16-41		III	2120:30-2124	2	8-41
	III	1133:45-1134	1-	17-38		III	2200:30-2204	2	8-41
	III	1136:15-1136:45	1+	18-41		III	2208:30-2209	1+	20-41
25	III	1140:15-1140:45	1	21-41	26	III	2209:30-2213:15	2	8-41
	III	1232:15-1232:45	1	23-41		III	2227:30-2228	1	20-41
	III	1234:15-1235	?	20-41		IV	2241-2252	1+	8-41
	III	1236:30-1239:15	?	16-41		III	2241:45-2244:30	3	8-41
	III	1244-1244:30	1-	27-38		II	2246:30-2250	1	28-41
	III	1248-1248:15	1-	28-39		II	2303-2310	2	27-41
	III	1339:15-1339:45	1+	20-41		III	1246:30-1247	1-	24-39
	III	1346:45-1347:15	1+	20-41		III	1348-1348:45	2	12-41
	III	1347:45-1348	1-	29-36		III	1430:45-1431:15	1	12-34
	III	1353-1353:30	1	20-37		III	1432:45-1438	1-	20-36
26	III	1354:45-1355:15	1-	23-28	27	III	1444:15-1444:30	1-	30-37
	III	1355:15-1355:45	1-	23-41		III	1444:45-1445	1-	29-38
	III	1355:45-1356:15	1	21-41		III	1445:15-1448:15	2	16-38
	III	1409:15-1409:45	1	16-41		III	1452:15-1454:15	?	13-41
	III	1419:45-1420:15	1	20-41		no observ.	1900-2147		
	III	1427:15-1427:45	1	20-41		III	1403:15-1404	1-	22-36
	III	1444-1444:30	1-	23-32		continuum	1406:30-1412:30	3	11-41
	III	1451-1451:30	1+	12-37		III	0006:15-0007	1	20-41
	III	1503:45-1504:15	1-	23-41		III	0007:15-0008:15	1	20-41
	III	1512:30-1513	1-	27-39		III	0008:45-0009	1-	22-41
28	III	1513:30-1515:15	3	11-41	30	III	0009:15-0009:30	1-	22-31
	III	1517-1517:30	1	16-41		III	1849:30-1854:15	3	8-41
	III	1639-1641	3	8-41		III	1259:45-1301:15	2	15-41
	III	1648:15-1648:30	1-	27-37					
	III	1649-1649:15	1	27-39					
	III	1652:15-1652:30	1	22-41					
	III	1724:45-1725	1	22-41					
	III	1736-1736:30	1	10-41					
	III	1751:30-1753	1+	14-41					
	III	1820:15-1821:30	2	8-41					

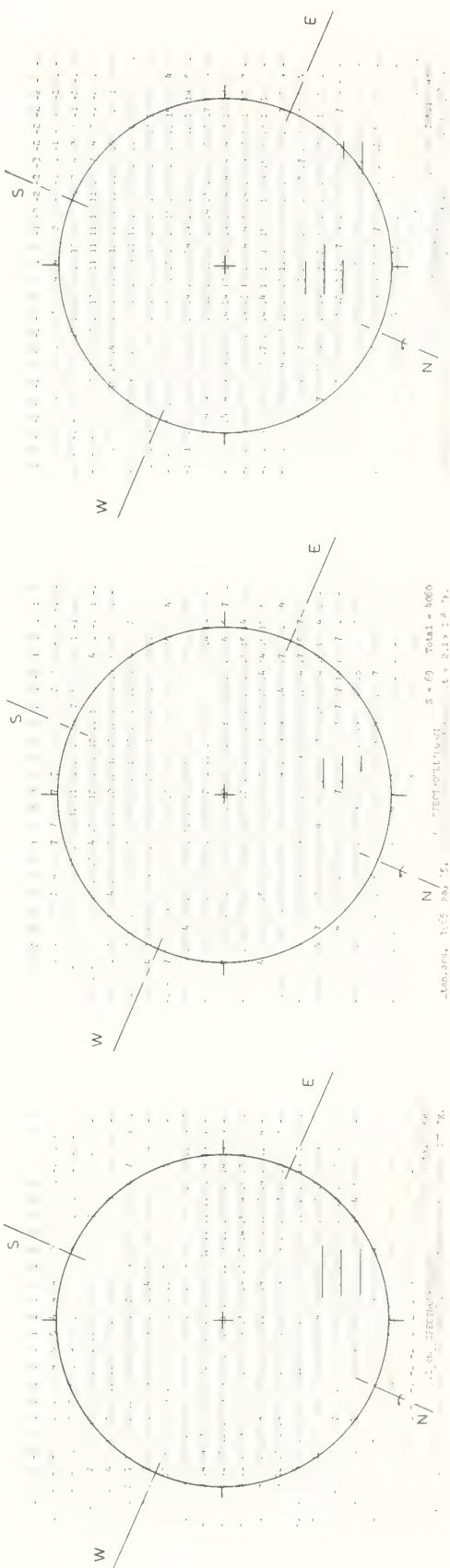
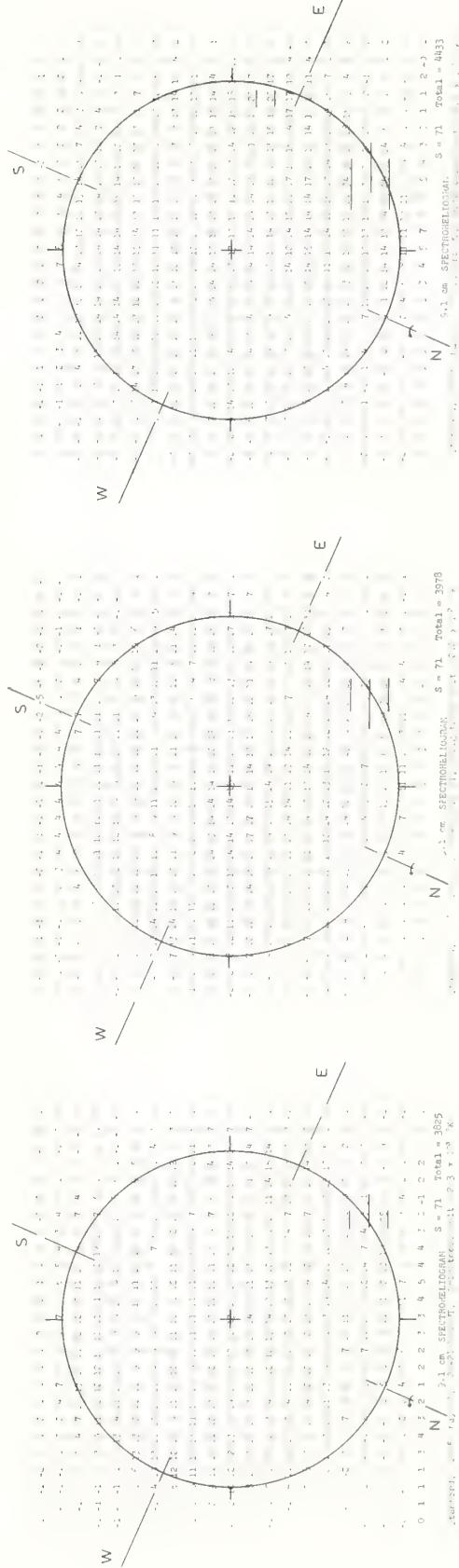
COMMERCE - STANDARDS - BOULDER

## SOLAR RADIO EMISSION SPECTROHELIOPHOTOGRAMS

STANFORD

MAY 1965

9.1 cm

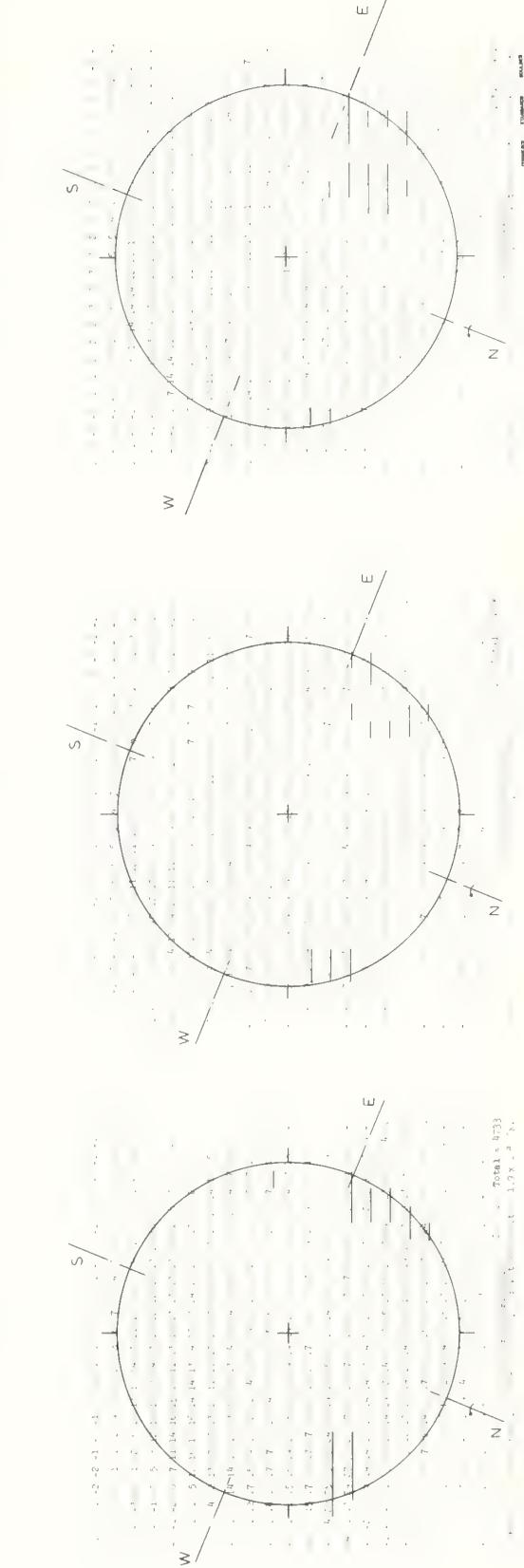
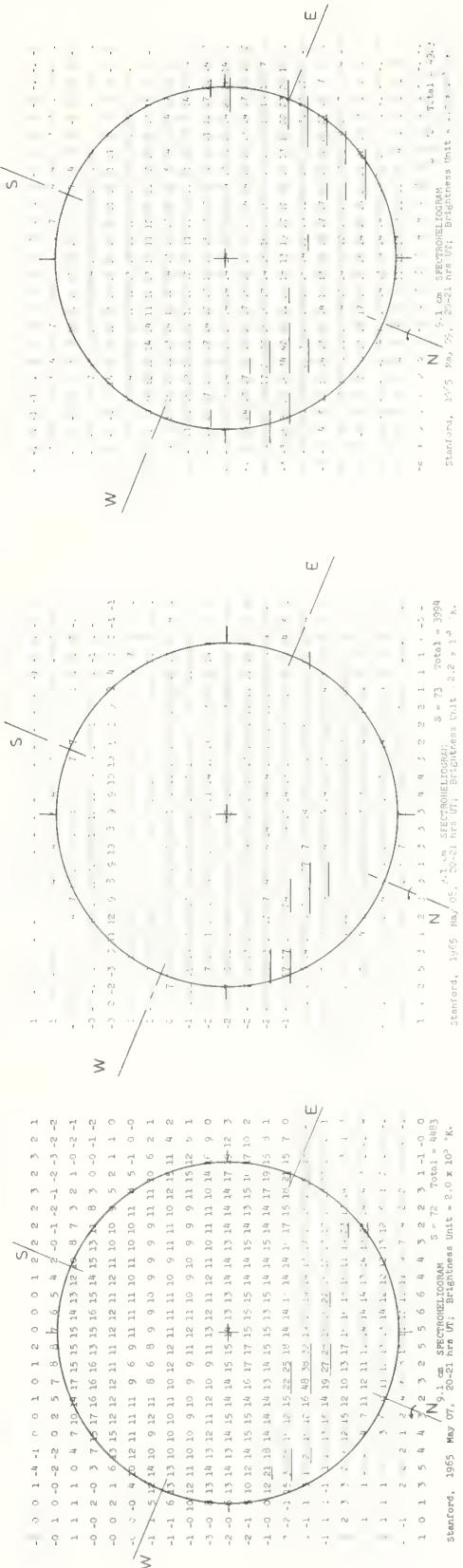


# STANFORD SOLAR RADIO EMISSION SPECTROHELIOPHOTOGRAMS

MAY 1965

STANFORD

9.1 cm

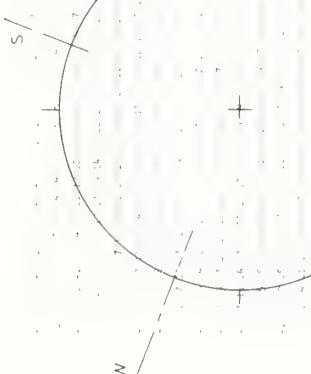


# SOLAR RADIO EMISSION SPECTROHELILOGRAMS

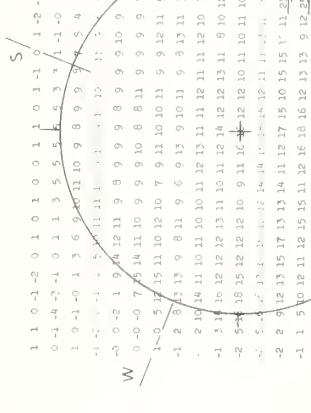
# STANFORD EMISSION SPECTROHELILOGRAMS

MAY 1965

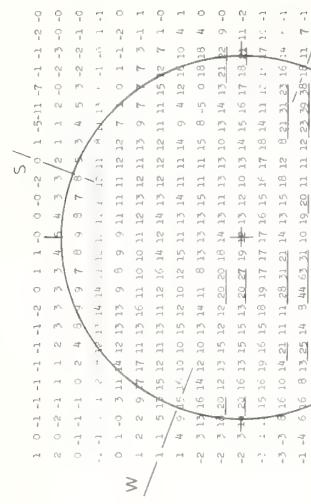
STANFORD



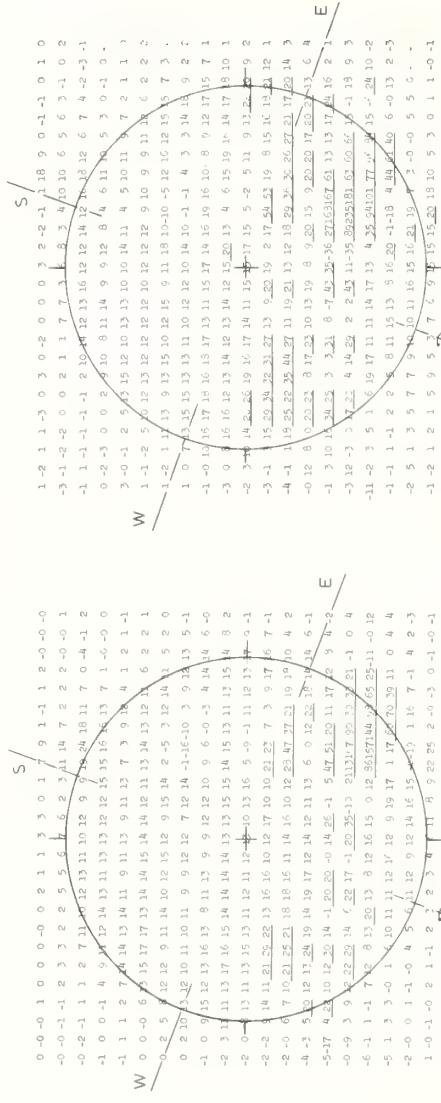
Stanford, 1965 May 14, 10:21 UT; Brightness Unit =  $2.3 \times 10^3$   $\text{W}_\text{K}$ .  
 N = 9.1 cm SPECTROHELILOGRAM.  $S = 75$ . Total = 4666  
 S = 75. Total = 53678  
 Stanford, 1965 May 14, 10:21 UT; Brightness Unit =  $2.3 \times 10^3$   $\text{W}_\text{K}$ .



Stanford, 1965 May 14, 20:21 UT; Brightness Unit =  $2.3 \times 10^3$   $\text{W}_\text{K}$ .  
 N = 9.1 cm SPECTROHELILOGRAM.  $S = 75$ . Total = 4666  
 S = 75. Total = 53678  
 Stanford, 1965 May 14, 20:21 UT; Brightness Unit =  $2.3 \times 10^3$   $\text{W}_\text{K}$ .



Stanford, 1965 May 15, 09:21 UT; Brightness Unit =  $1.9 \times 10^3$   $\text{W}_\text{K}$ .  
 N = 9.1 cm SPECTROHELILOGRAM.  $S = 91$ . Total = 6174  
 S = 91. Total = 6174



Stanford, 1965 May 15, 20:21 UT; Brightness Unit =  $1.9 \times 10^3$   $\text{W}_\text{K}$ .  
 N = 9.1 cm SPECTROHELILOGRAM.  $S = 91$ . Total = 6174  
 S = 91. Total = 6174

Stanford, 1965 May 16, 10:21 UT; Brightness Unit =  $2.0 \times 10^3$   $\text{W}_\text{K}$ .

Stanford, 1965 May 16, 20:21 UT; Brightness Unit =  $2.1 \times 10^3$   $\text{W}_\text{K}$ .

Stanford, 1965 May 17, 10:21 UT; Brightness Unit =  $2.0 \times 10^3$   $\text{W}_\text{K}$ .

Stanford, 1965 May 17, 20:21 UT; Brightness Unit =  $2.1 \times 10^3$   $\text{W}_\text{K}$ .

Stanford, 1965 May 18, 10:21 UT; Brightness Unit =  $2.0 \times 10^3$   $\text{W}_\text{K}$ .

Stanford, 1965 May 18, 20:21 UT; Brightness Unit =  $2.1 \times 10^3$   $\text{W}_\text{K}$ .

Stanford, 1965 May 19, 10:21 UT; Brightness Unit =  $2.0 \times 10^3$   $\text{W}_\text{K}$ .

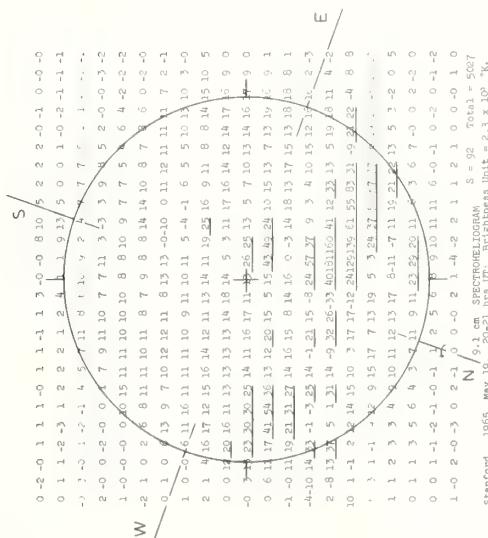
Stanford, 1965 May 19, 20:21 UT; Brightness Unit =  $2.1 \times 10^3$   $\text{W}_\text{K}$ .

# SOLAR RADIO EMISSION SPECTROHELIOPHAMS

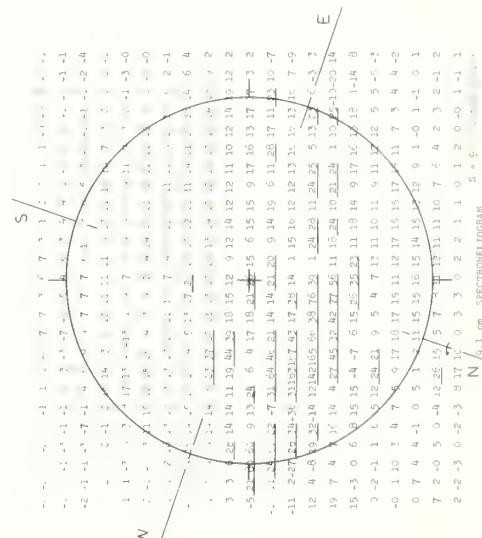
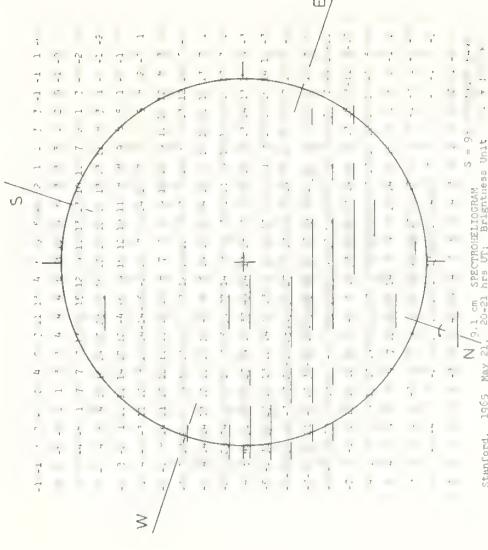
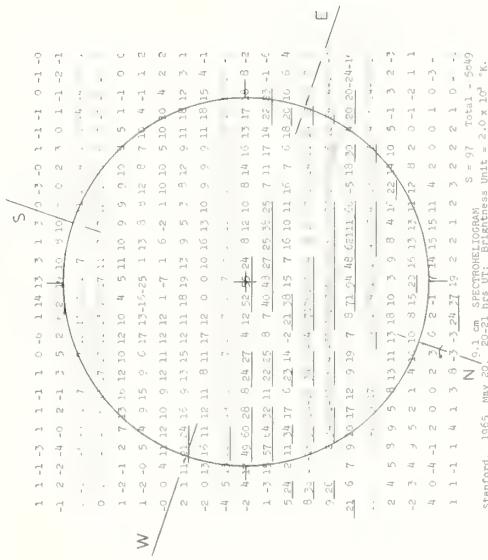
MAY 1961

STANFORD

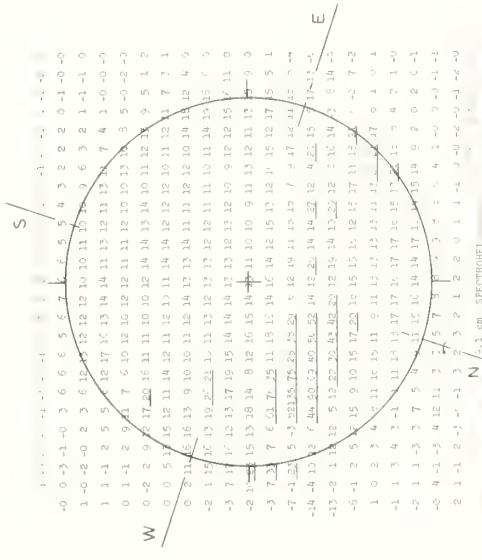
9.1 cm



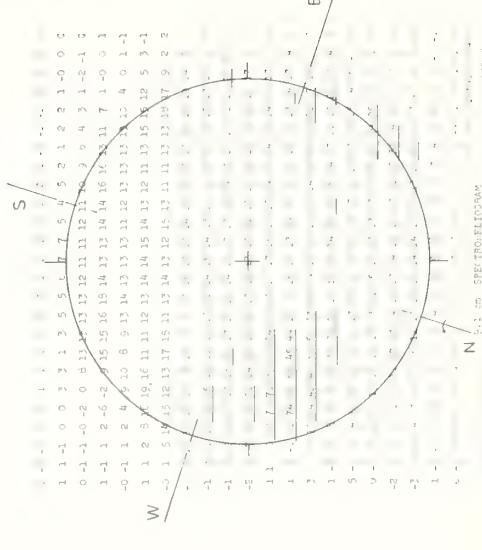
卷之三



Stanford, 1965 May 22, 19:21 hrs UT; Brightness Unit =  $2.2 \times 10^8$  °K.



21 hrs UT: Brightness limit = 2.1 x 10<sup>-6</sup> K.

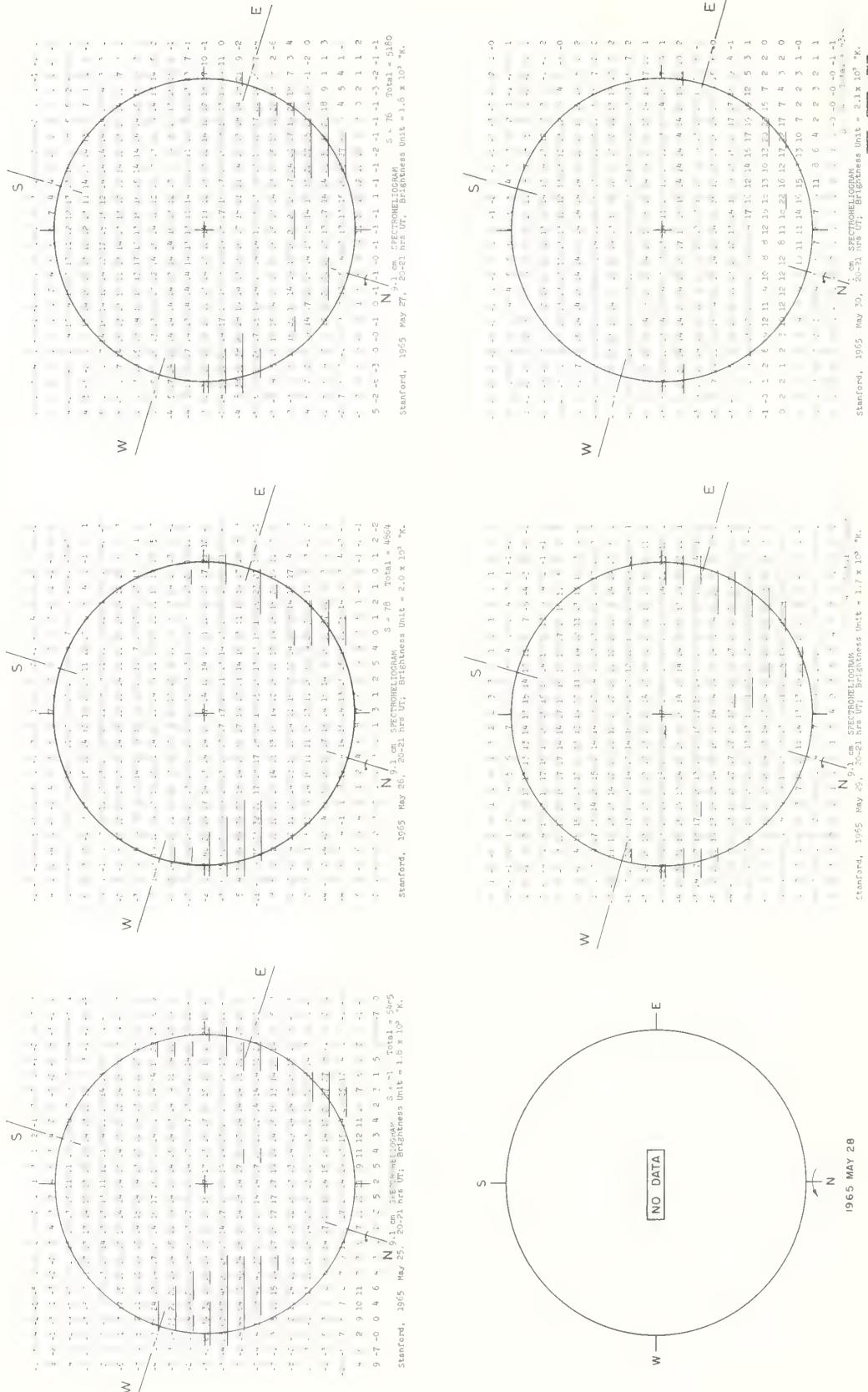


Stanford, 19-5 May, 24, 1921 hrs VI; Brightness Unit = 2.0  $\times 10^3$   $\text{cd}/\text{sr}$

## SOLAR RADIO EMISSION SPECTROHELIograms

MAY 1965

STANFORD

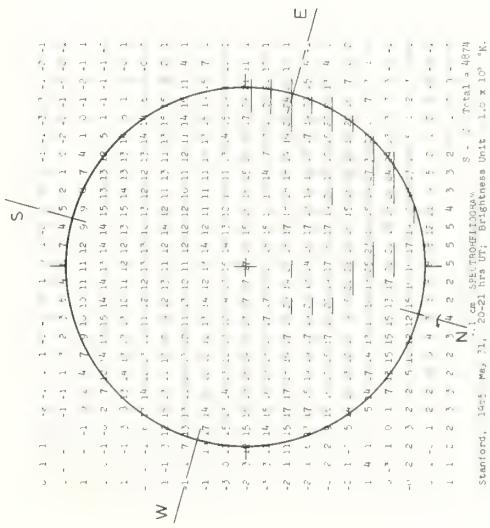


# SOLAR RADIO EMISSION SPECTROHELIOPHOTOGRAMS

MAY 1965

STANFORD

9.1 cm



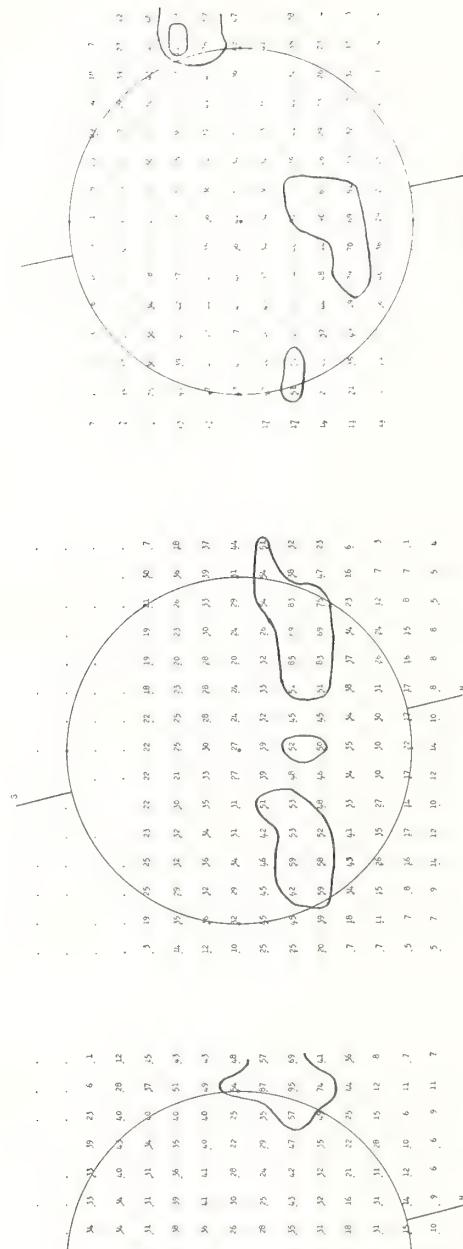
Stanford, May 31, 1965. N/A, cm, 20-21 Septentriod. S. - of Total Brightness Unit 1.0 x 10<sup>12</sup>.

## SOLAR RADIO EMISSION SPECTROHELIOPHOTOGRAMS

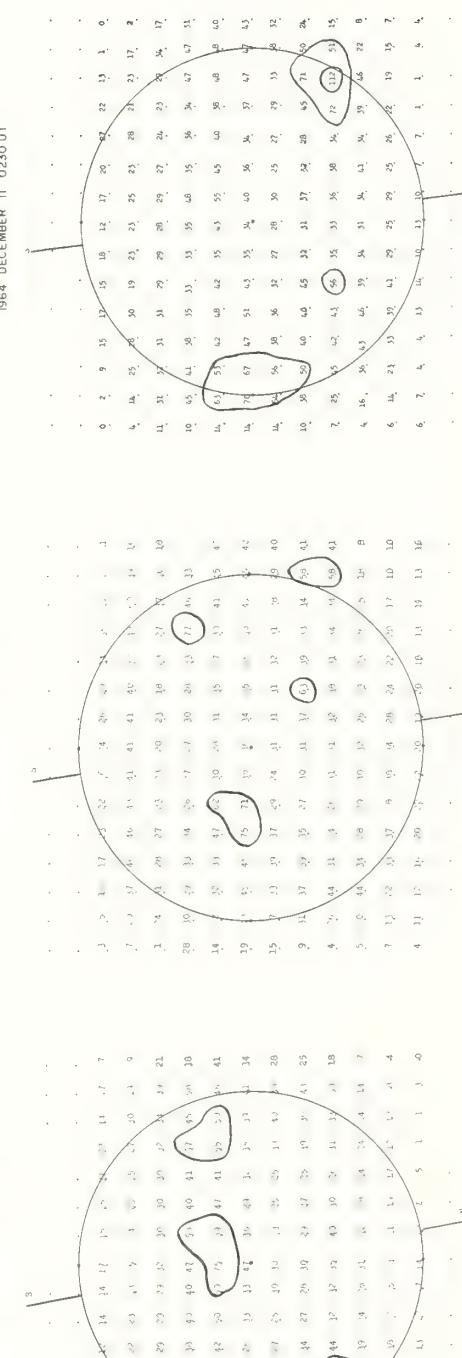
DECEMBER 1964

FILEURS, AUSTRALIA

21 CM

Resolution, about 3 minutes  
of arc.Unit of Brightness  
Temperature: 1700°K

1964 DECEMBER 7 0230 UT



1964 DECEMBER 10 0230 UT

1964 DECEMBER 14 0230 UT

1964 DECEMBER 16 0230 UT

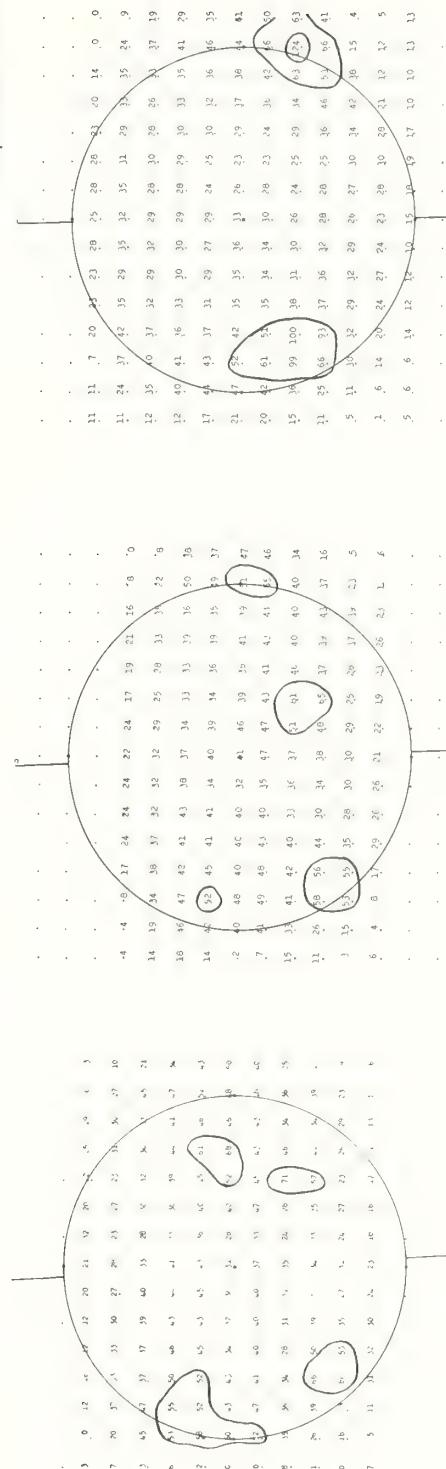
1964 DECEMBER 18 0230 UT

# SOLAR RADIO EMISSION SPECTROHELIOPHOTOGRAMS

DECEMBER 1964 — JANUARY 1965

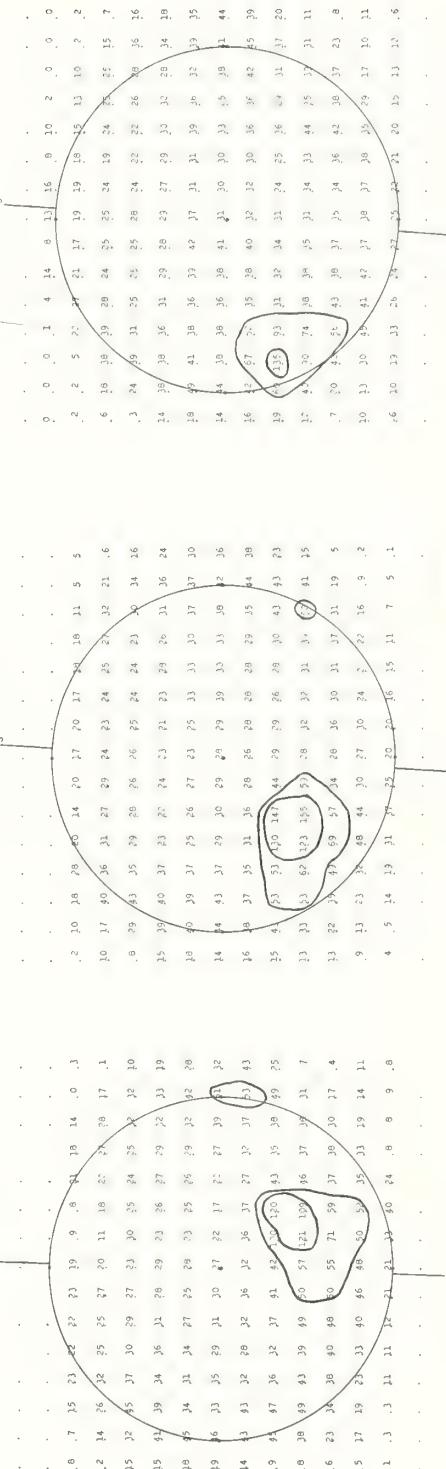
FLEURS, AUSTRALIA

21 cm  
Resolution: about 3 minutes  
of arc.  
Unit of Brightness  
Temperature: 1700°K



1964 DECEMBER 29 0230 UT

1965 JANUARY 4 0230 UT



1964 DECEMBER 29 0230 UT

1965 JANUARY 4 0230 UT

1965 JANUARY 5 0230 UT

1965 JANUARY 6 0230 UT

1965 JANUARY 7 0230 UT

1965 JANUARY 8 0230 UT

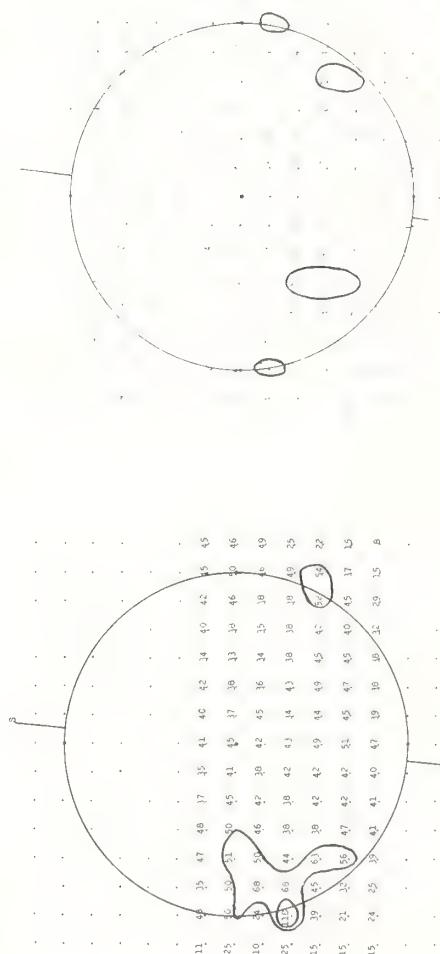
# SOLAR RADIO EMISSION SPECTROHELIOPHOTOGRAMS

JANUARY 1965

FILEURS, AUSTRALIA

21 cm  
Resolution: about 3 minutes  
of arc.

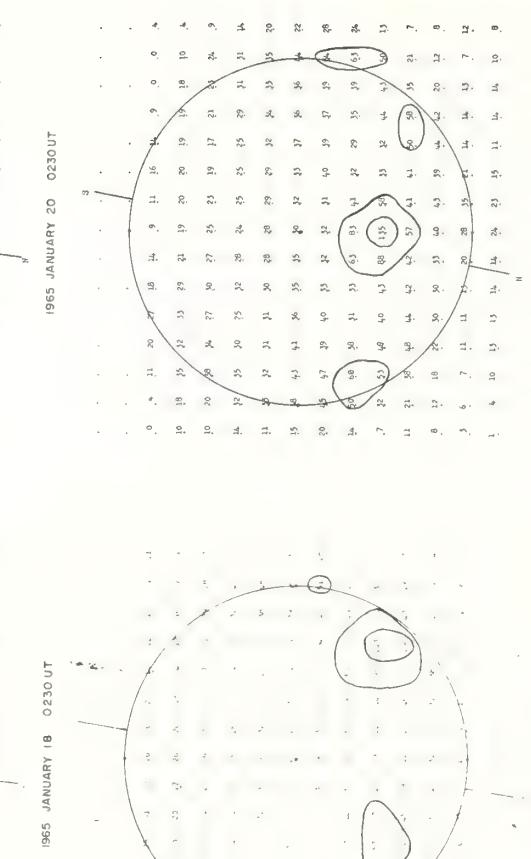
Unit of Brightness  
Temperature: 1700° K



1965 JANUARY 15 0230 UT



1965 JANUARY 18 0230 UT



1965 JANUARY 20 0230 UT



1965 JANUARY 25 0230 UT

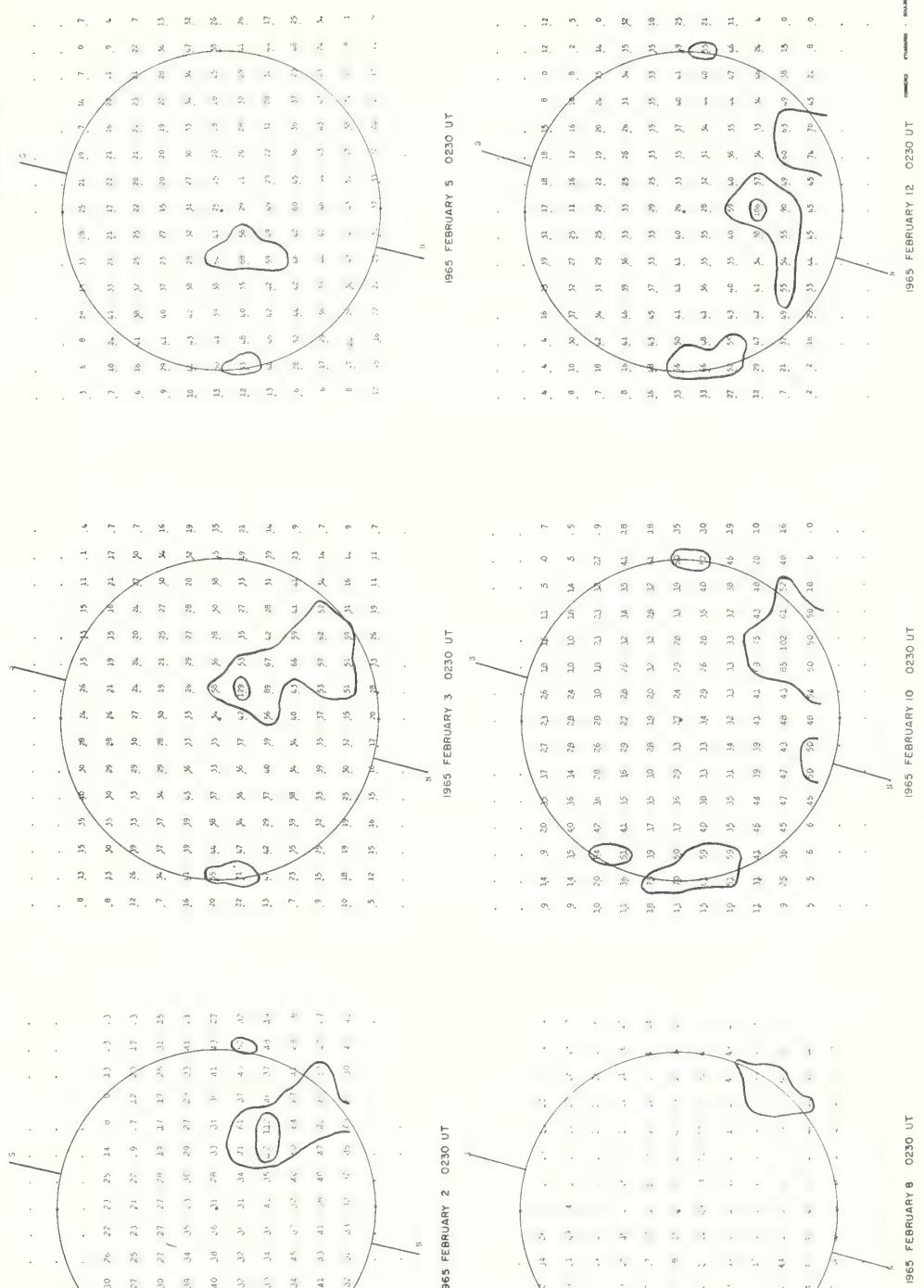


1965 JANUARY 28 0230 UT

## SOLAR RADIO EMISSION SPECTROHELIograms

FLEURS, AUSTRALIA

FEBRUARY 1965

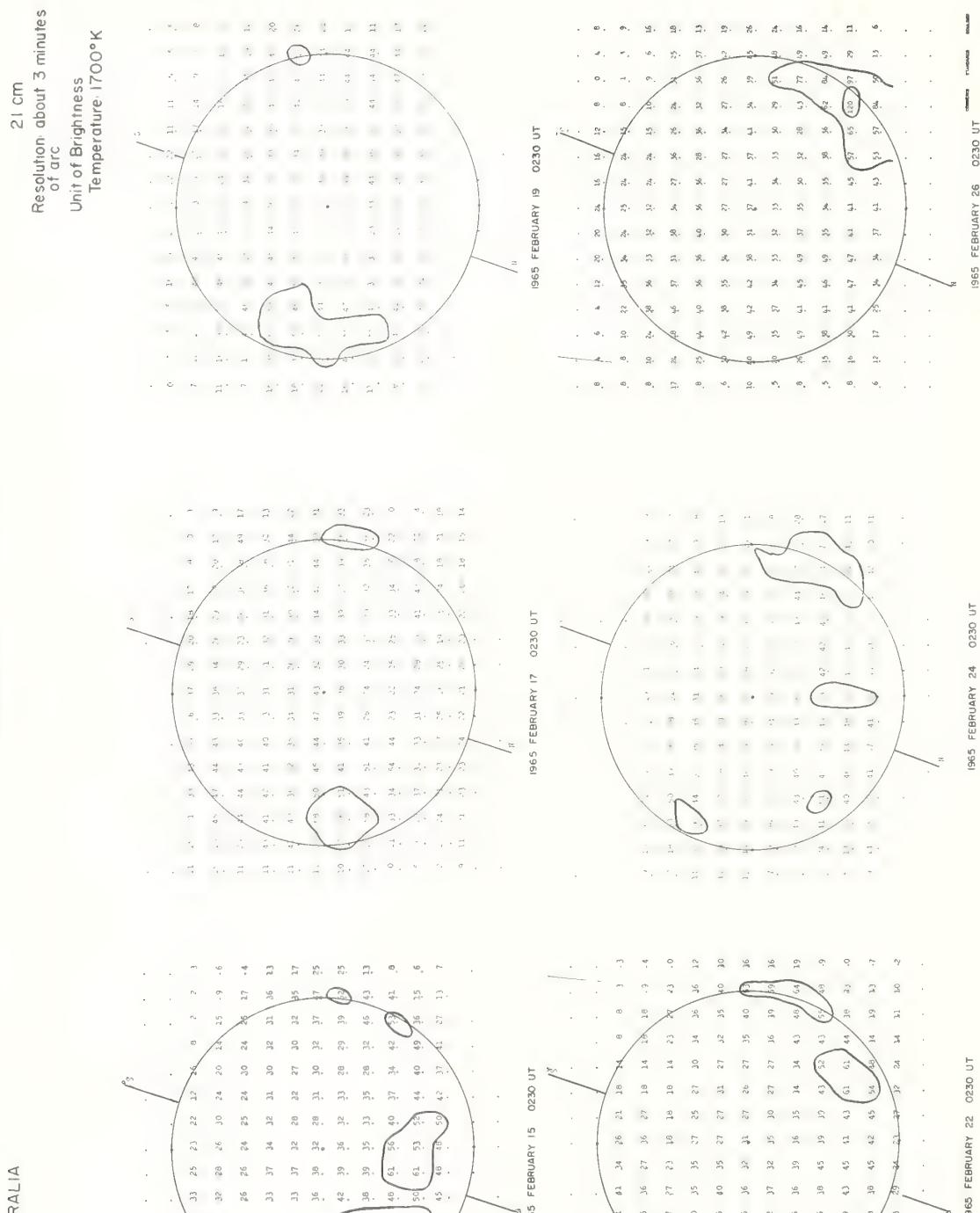


## SOLAR RADIO EMISSION SPECTROHELIOPHOTOGRAMS

FLEURS, AUSTRALIA

FEBRUARY 1965

21 cm  
Resolution about 3 minutes  
of arc  
Unit of Brightness  
Temperature: 1700°K





## COSMIC RAY INDICES

## (Neutron Monitors)

APRIL 1965

April 1965	CHURCHILL	CLIMAX	DALLAS
	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR	DAILY AVERAGE COUNTS PER HOUR
1	6599.5	3381.5	6646.5
2	6583.2	3379.6	6625.6 (22)
3	6593.5	3384.0	6638.9
4	6592.9	3388.3	6646.0
5	6580.1	3301.1	6652.4 (19)
6	6597.9	3375.9	6640.3
7	6595.8	3384.3	6646.4
8	6605.8	3378.8	6631.5
9	6601.5	3401.1	6658.8
10	6612.2	3408.9	6658.6
11	6620.4	3406.0	6673.8
12	6616.1	3398.9	6698.0
13	6622.4	3387.6	6681.7
14	6625.5	3384.4	6664.3
15	6642.3	3394.6	6679.6
16	6675.7	3398.5	6701.7
17	6666.8	3392.9 (28)	6697.2
18	6573.2	3352.0 (2)	6726.1
19	6553.3	3392.5 (4)	6656.3
20	6566.1	3367.7	6662.3
21	6568.8	3364.9	6655.8
22	6568.9	3373.5	6672.2
23	6554.8	3380.3	6662.6
24	6575.0	3383.7	6657.8
25	6591.4	3391.0	6664.6
26	6607.3	3398.4	6683.2
27	6605.2	3394.6	6671.5
28	6632.5	3391.3	6681.2
29	6644.5	3381.4	6682.4
30	6621.3	3376.8	6679.6

COMMERCE - STANDARDS - BOULDER

( ) Number of hours for which data are available if less than 24 (or number of section hours if less than 40 for Climax).

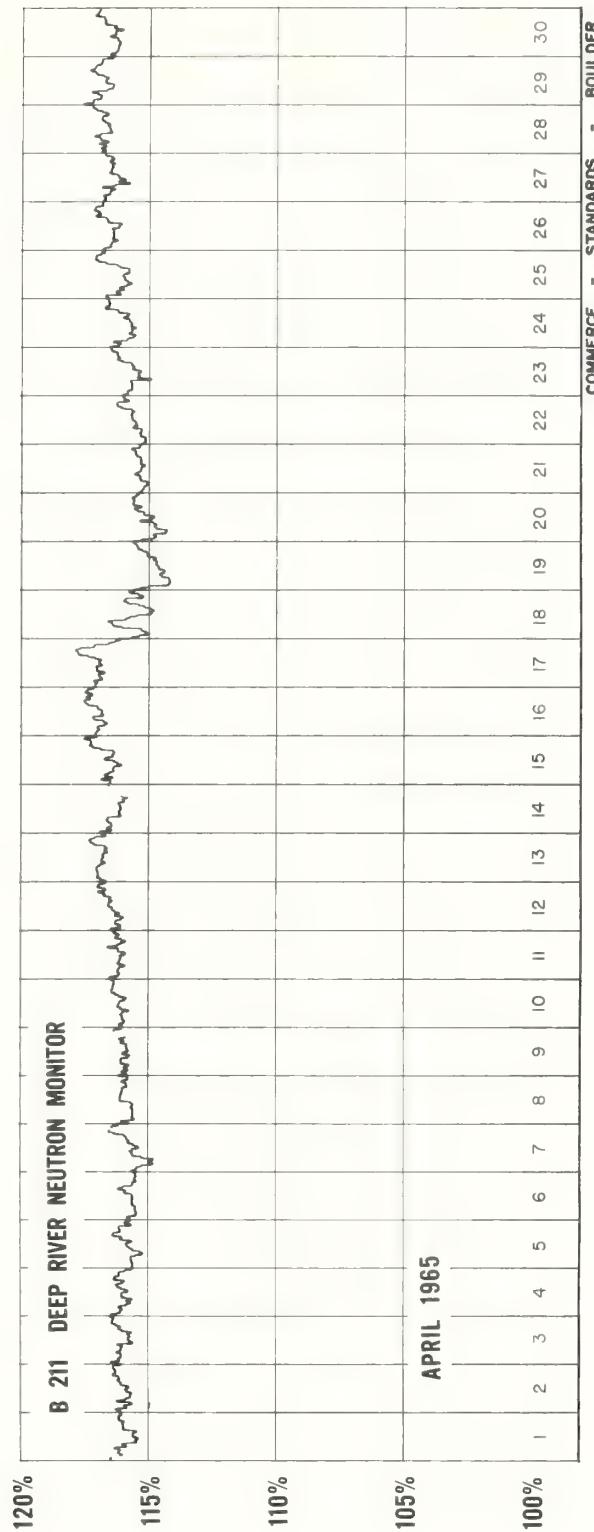
Churchill Super Neutron Monitor, Scaling Factor 120.

Climax IGC Station B305, Scaling Factor 128.

Dallas Super Neutron Monitor, Scaling Factor 120.

COSMIC RAY INDICES

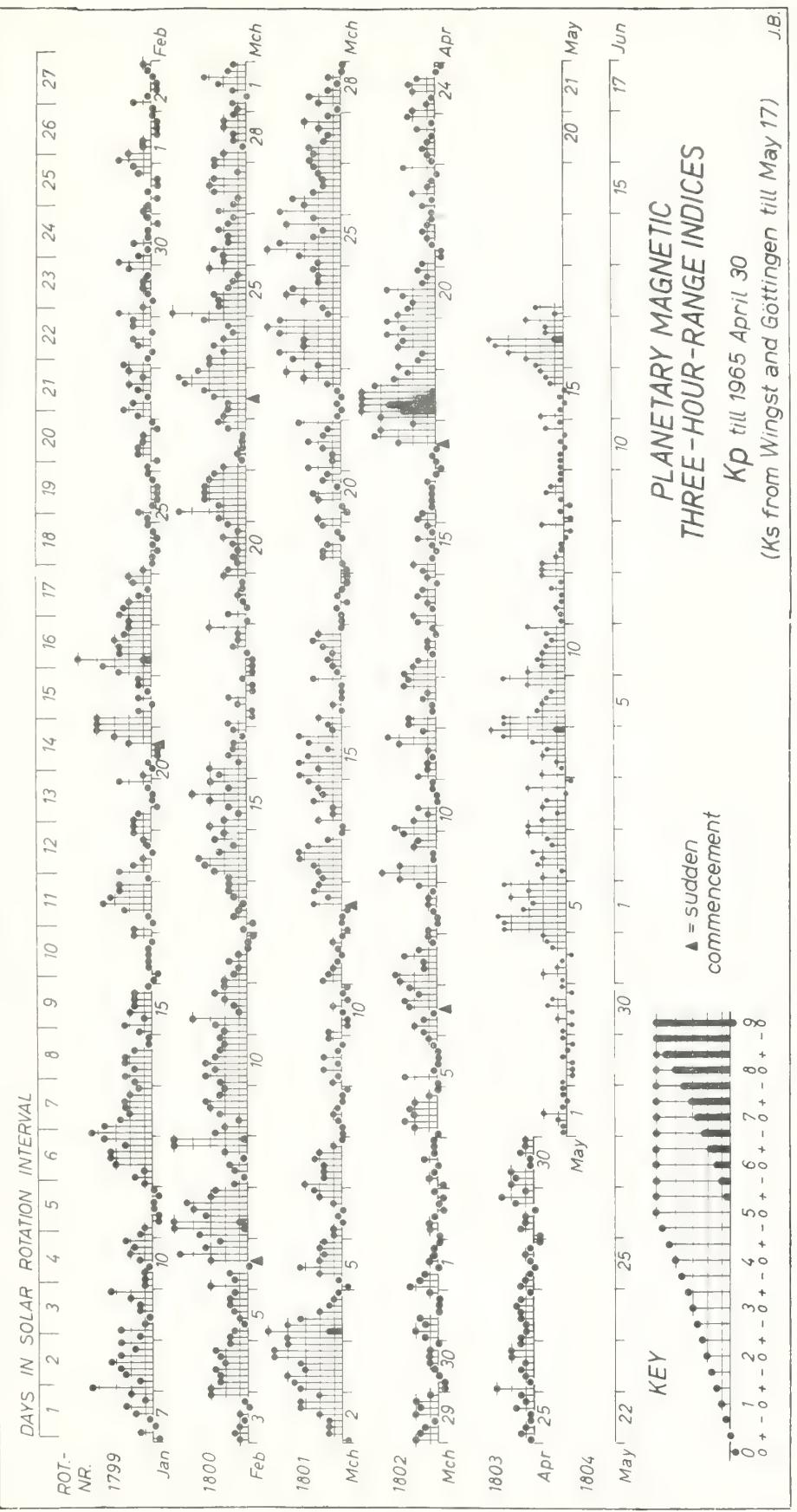
(Pressure Corrected Hourly Totals)



## GEOMAGNETIC ACTIVITY INDICES

APRIL 1965

April 1965	C	Values Kp								Sum	Ap	Final Selected Days
		Three hour Gr. interval										
		1	2	3	4	5	6	7	8			
1	0.0	2+	2-	1+	0+	1o	1-	1-	0+	8+	4	Five Quiet
2	0.0	0+	1o	1o	1-	0o	0+	0o	1-	4o	2	
3	0.0	0o	1o	1-	0+	1+	1-	1-	1-	5+	3	
4	0.5	0+	2o	3-	2o	2+	2o	1o	0+	13-	6	
5	0.1	0+	3-	1-	0+	0+	0+	1-	1o	6+	4	
6	0.4	1+	2o	1+	1-	2+	3-	2-	2+	14+	7	21
7	0.4	3o	3+	1+	1+	3-	2-	1-	1o	15o	8	28
8	0.2	1o	0+	0+	1-	1o	1o	1-	2-	7-	4	
9	0.6	3o	4o	3o	1-	1-	2o	2-	3-	18-	11	
10	0.3	3+	2o	1o	2-	0+	0+	1-	1-	10o	6	
11	0.7	2-	1o	1o	1-	1o	3o	4-	1+	13+	8	Five Disturbed
12	0.5	2+	2+	1-	1-	1+	1o	3-	2+	13+	7	
13	0.3	3-	2o	2-	1-	1o	1o	0+	1-	10o	5	
14	0.2	2-	2o	1-	1o	2-	1+	0+	1o	10-	5	
15	0.2	1+	2o	1-	0+	1-	2-	1-	2o	8+	4	
16	0.2	2-	1+	1-	1-	1-	1-	1o	0+	7o	4	19
17	0.9	0o	0+	1-	0+	3o	4+	4o	2o	15-	11	20
18	1.8	4o	7o	8-	6+	5+	4+	3+	2+	40+	68	
19	1.0	3o	2-	1+	3o	3-	4-	3-	4-	22-	14	
20	0.8	3o	2+	2o	3-	4-	1+	1o	2-	18-	10	
21	0.2	1+	0o	0o	1-	1o	1+	1o	1-	6o	3	Ten Quiet
22	0.4	1-	1+	1-	2o	1o	1-	0+	3-	9+	5	
23	0.2	1-	1o	1+	1o	1-	2-	1-	2+	9+	5	
24	0.3	2o	1o	1-	2o	2+	2-	0+	0o	10o	5	
25	0.2	1-	1+	1o	1-	1-	2-	1o	1+	8+	4	
26	0.4	3o	1-	1o	1+	1o	2o	2o	1+	12+	6	5
27	0.2	1+	1o	1o	1+	1+	2-	1+	1-	10-	5	8
28	0.1	1+	1o	1-	0+	1-	1o	1-	0o	6-	3	15
29	0.4	0o	1+	1o	1o	0+	2-	3-	1o	9o	5	16
30	0.2	2o	2-	2o	1-	1-	1+	1o	1o	10+	5	21
												25
												28
Mean:										Mean:		8



**PLANETARY MAGNETIC  
THREE-HOUR-RANGE INDICES**

*Kp* till 1965 April 30  
(Ks from Wengst and Göttingen till May 17)

COMMERCE - STANDARDS - BOULDER

## CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

APRIL 1965

NORTH ATLANTIC, NORTH PACIFIC

APR 1965	WHOLE DAY INDICES			ADVANCE FORECASTS (Jc- REPORTS) FOR WHOLE DAY	NORTH ATLANTIC						NORTH PACIFIC				GEOMAGNETIC INDICES								
					6-HOURLY QUALITY FIGURES			SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF:			6-HOURLY QUALITY FIGURES			KFR		AFR		KSI					
	NORTH ATLANTIC	NORTH PACIFIC	AVERAGE HIGH LATITUDE		00 TO 06 06	06 TO 12 12	12 TO 18 18	18 TO 24 24	00 TO 06 06	06 TO 12 12	12 TO 18 18	18 TO 24 24	HALF DAY (1)	OB- SERVED (2)	PREDI- CTED (1)	HALF DAY (2)	OB- SERVED (1)	PREDI- CTED (2)					
1	7-	6	6	6	6+	6+	7-	7-	7	6	7	7	6	6	6	6	1	1	3	7	1	1	3
2	7-	6	6	6	6	7-	6-	7-	7	6	7	7	6	6	6	6	1	0	1	7	0	0	1
3	7-	6	6	6	6	7-	6+	7-	7	6	7	7	6	6	6	6	1	1	2	5	0	0	0
4	7-	6	6	6	6	6+	6+	7-	7	6	6	7	6	6	6	6	2	2	7	3	2	1	5
5	7-	6	6	7	7-	6o	7-	7	7	6	7	7	6	6	6	6	1	1	3	3	0	0	0
6	6+	6	6	7	6o	6o	7-	7-	7	6	7	7	6	6	6	6	2	2	6	3	1	2	4
7	6+	7	7	7	6+	6-	7-	7-	6	6	7	7	7	6	7	6	2	1	6	3	2	1	6
8	6+	7	7	7	6o	5+	7-	7	7	6	6	7	7	7	6	7	1	1	3	5	0	1	2
9	6+	6	6	7	6o	5+	7-	7	7	6	5	7	7	6	6	7	3	2	11	7	2	1	6
10	6+	7	7	6	6+	6-	7-	7-	6	6	7	7	6	6	7	6	2	1	5	7	2	0	4
11	6+	6	6	6	6+	6-	7-	7-	6	6	7	7	6	6	6	6	1	2	6	7	1	2	5
12	6+	7	7	6	6o	5+	7-	7-	6	5	7	7	6	7	7	6	2	2	7	5	1	2	4
13	6o	7	7	6	6o	5+	7-	7-	6	6	7	7	6	7	7	6	2	1	5	3	1	0	3
14	6+	7	7	7	6o	6-	7-	7	6	6	7	7	6	7	7	6	2	1	5	3	1	0	2
15	6+	7	7	7	6+	6-	7-	7-	6	6	7	7	6	7	7	7	1	1	2	5	1	1	3
16	6+	7	7	7	7-	5+	7-	7o	6	6	7	7	7	6	7	6	1	1	3	5	2	0	3
17	6+	7	7	7	6o	6o	7-	7-	7	6	7	6	6	7	6	6	1	3	9	7	0	2	7
18	(4+)	5	5	6	5o	3o	4+	6-	5	4	5	4	5	4	4	5	(6)	3	48	11	(7)	(4)	34
19	5+	(4)	5	6	4o	4o	6+	7-	4	4	6	6	4	5	5	4	2	3	11	15	2	3	13
20	6-	5	5	6	6o	5-	6o	7-	5	5	6	6	6	5	5	5	2	2	9	11	2	2	9
21	6+	6	6	6	6-	6-	7-	7-	6	5	7	7	6	6	6	6	1	1	3	11	0	1	3
22	6+	6	6	6	6+	5o	7-	7o	6	6	7	7	6	6	6	6	1	1	4	7	2	1	4
23	6o	7	7	6	6-	5o	7-	7-	6	5	7	7	6	7	6	6	1	1	5	7	1	1	5
24	6+	6	6	6	6-	6o	6+	7-	6	5	7	7	6	6	6	6	1	1	4	5	2	1	4
25	6o	7	7	6	6-	5+	6+	7-	6	5	7	7	6	6	7	6	1	1	3	5	1	1	2
26	6+	7	7	7	6o	6-	7-	7-	6	5	7	7	6	7	7	6	1	2	5	5	2	1	6
27	6o	7	7	7	6o	6-	6+	6+	6	6	7	7	6	7	7	6	1	2	5	5	1	1	4
28	6o	7	7	7	6-	5+	7-	7-	6	6	7	7	6	6	7	6	1	1	3	5	0	1	2
29	6+	7	7	6	7-	6-	7-	7-	6	6	7	7	6	7	7	6	1	1	5	3	1	1	4
30	6o	7	7	6	6o	5+	6o	7-	6	6	7	7	6	7	7	5	2	1	6	3	2	1	4
<u>SCORES</u>				P	17				22	19	25	25											
QUIET PERIODS:				S	13				7	9	4	4											
				U	0				0	0	0	0											
				F	0				0	0	0	1											
<u>DISTURBED PERIODS:</u>				P	0				1	1	0	0											
				S	0				0	1	1	0											
				U	0				0	0	0	0											
				F	0				0	0	0	0											

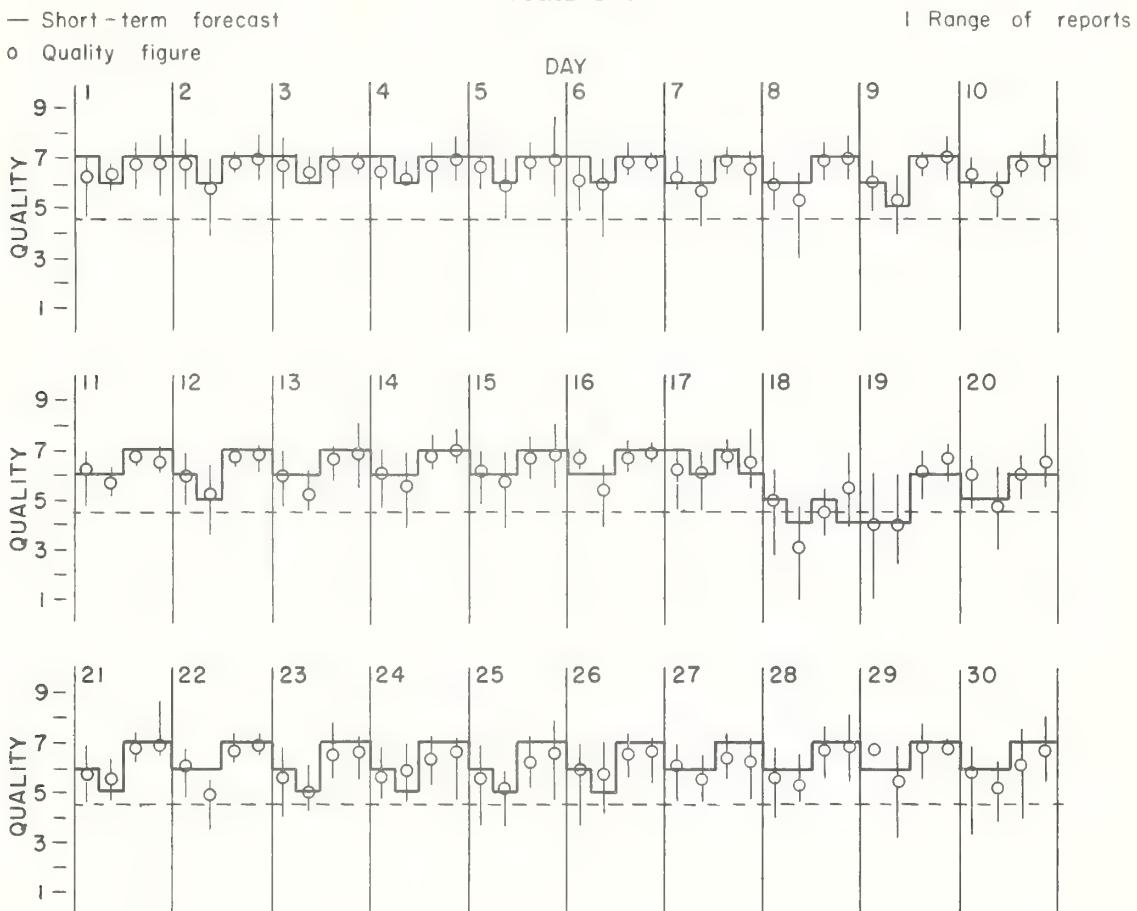
COMMERCE - STANDARDS - BOULDER

## NOTES:

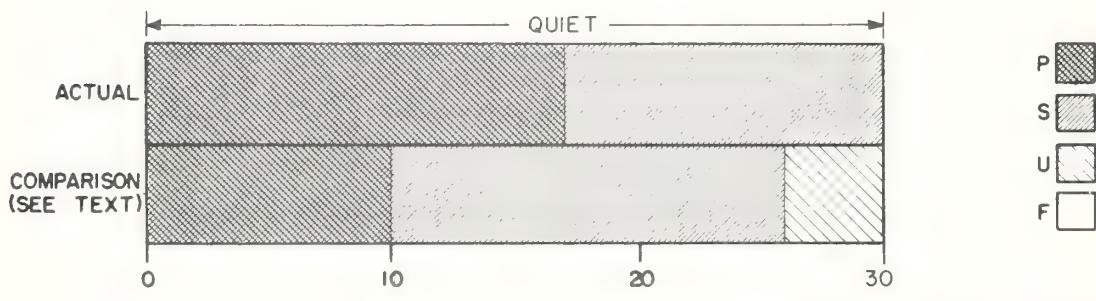
1. The advance Jc-forecasts are scored against the average high latitude whole day indices.
2. The observed indices for the North Pacific are low weight because of insufficient data available for their preparation.
3. The predicted AFR indices are issued each Wednesday for the coming seven days. The value for the first day of each prediction period is underscored.

## NORTH ATLANTIC

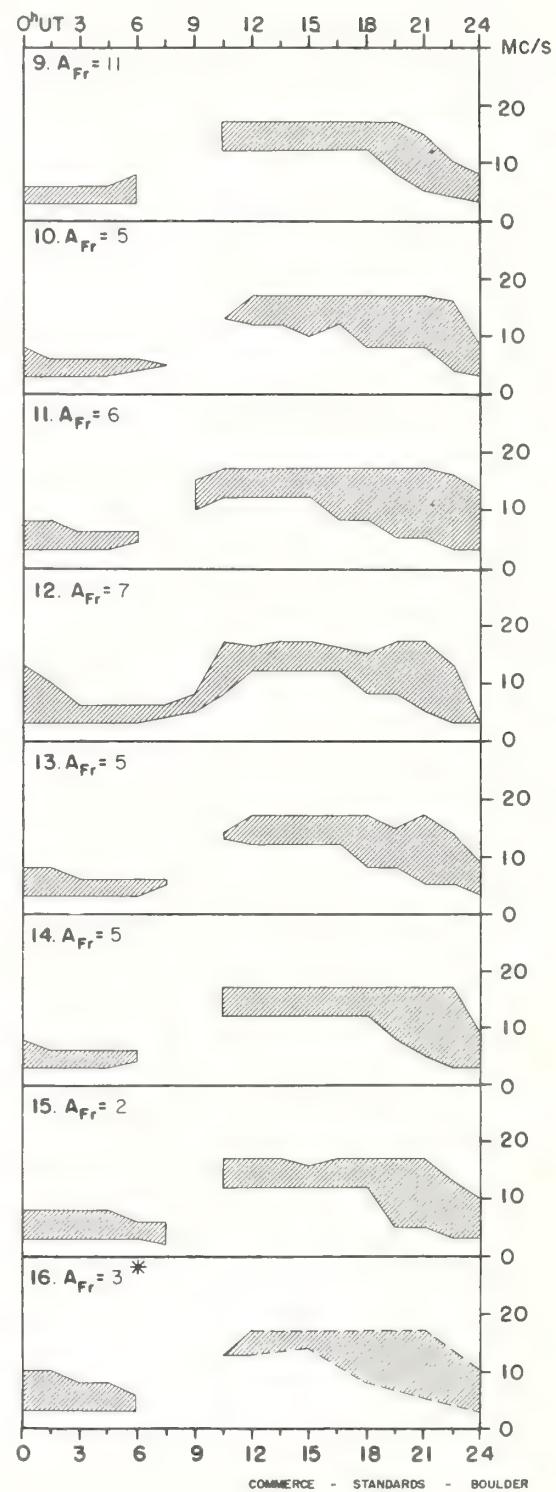
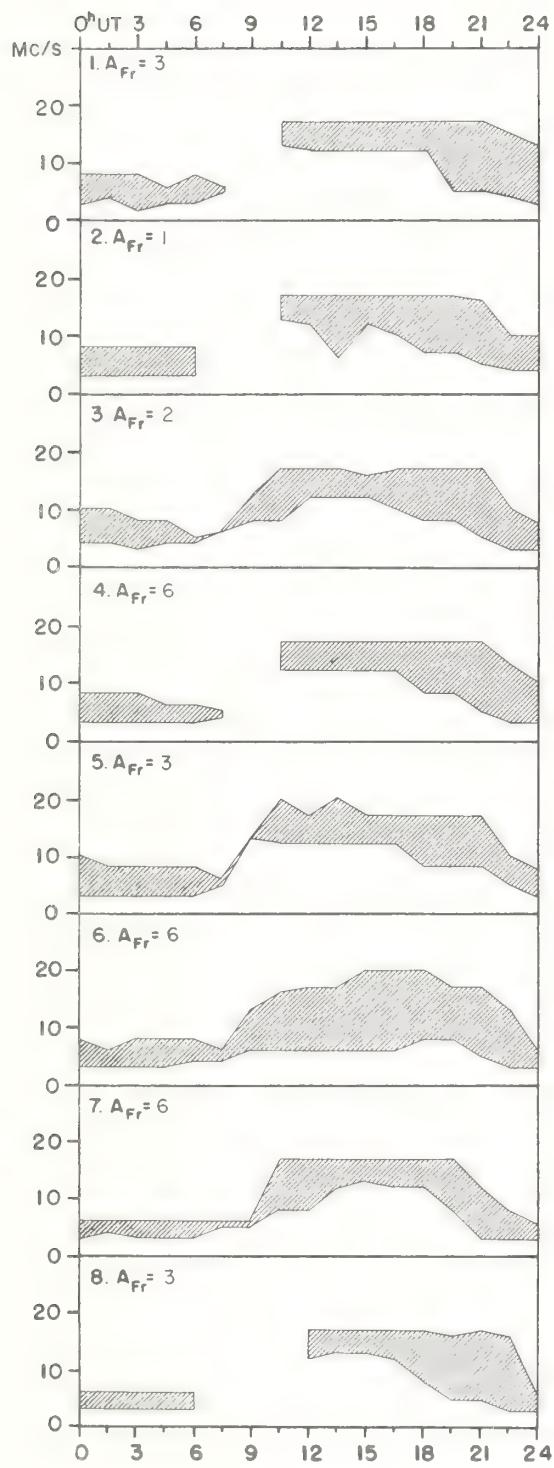
APRIL 1965



## HIGH LATITUDE



APRIL 1965

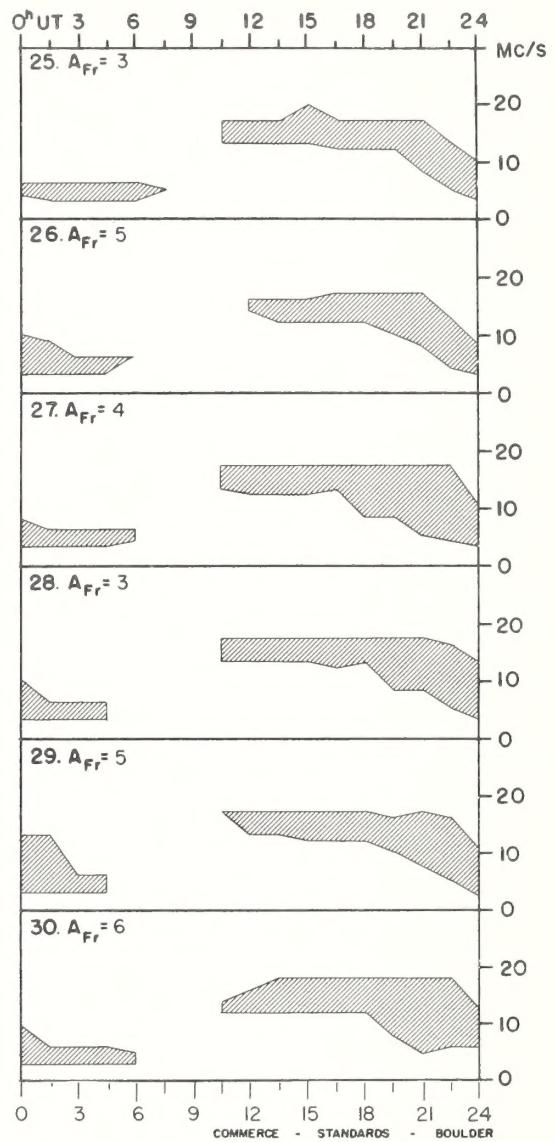
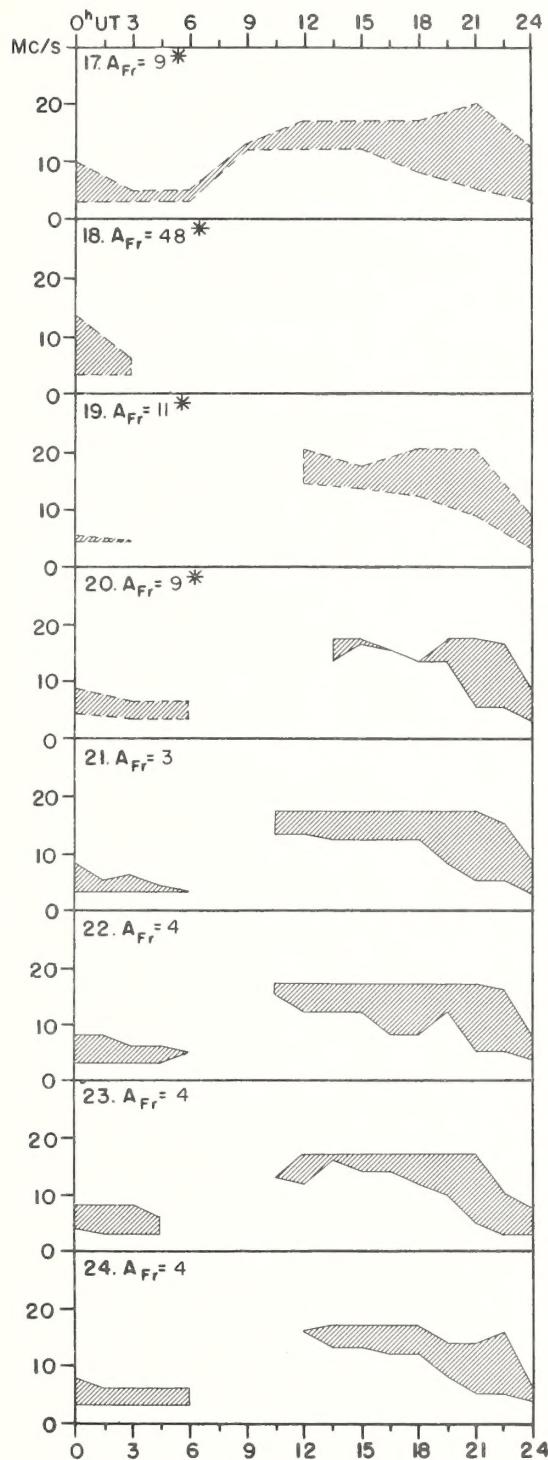


COMMERCE - STANDARDS - BOULDER

# USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

VII d

APRIL 1965



Adapted from Observations by Deutsches Bundespost

Note: Observations were reported for every third hour instead of each one and one-half hours from April 16, 1200 UT to April 20, 0600 UT, 1965.

## IQSY ALERT PERIODS

INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE

MAY 1965

May 1965	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT			
			NO.	TYPE	TIMING	ELABORATION
2	0400		196	Solar Activity	Exists	East Limb
3	0400		197	Solar Activity	Exists	
4	0400		198	Solar Activity	Exists	
15	0400		199	Solar Activity	Exists	East Limb
16	0400		200	Solar Activity	Exists	
17	0400		201	Solar Activity	Exists	Flares
18	0400		202	Solar Activity	Exists	
19	0400		203	Solar Activity	Exists	
20	0400		204	Solar Activity	Exists	
21	0400		205	Solar Activity	Exists	
22	0400		206	Solar Activity	Exists	
23	0400		207	Solar Activity	Exists	

COMMERCE - STANDARDS - BOULDER

Note: 1964 July 23-28 and September 19-20 have been designated QUIETSUN Retrospective World Interval, and  
 1964 September 21-24 has been designated IONMAGSTORM Retrospective World Interval.  
 This information was sent with the May 17 Geophysical Alert.



